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## 1965 Performance Trials of Field Crop Varieties

University of Tennessee Agricultural Experiment Station

Charles R. Graves

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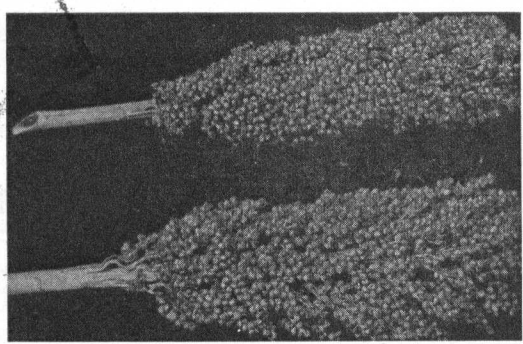
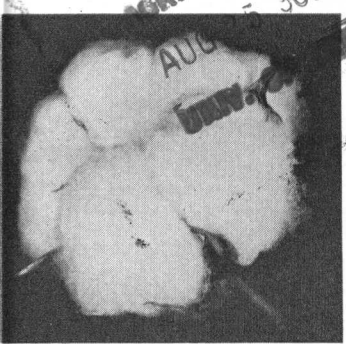
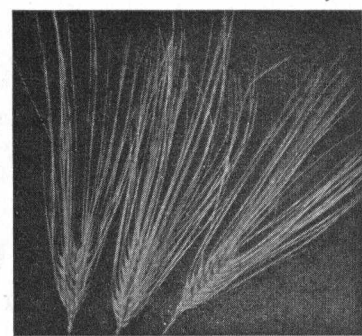
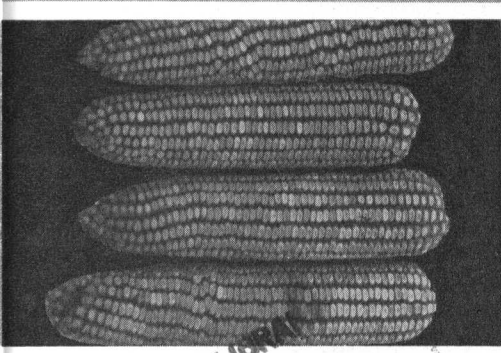
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# 1965 Performance Trials of Field Crop Varieties

BY CHARLES R. GRAVES  
DECEMBER 1965  
BULLETIN 396

The University of Tennessee  
Agricultural Experiment Station  
John A. Ewing, Director  
Knoxville

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# 1965

## PERFORMANCE TRIALS OF FIELD CROP VARIETIES

**CORN — COTTON — OATS — WHEAT — BARLEY — SOYBEANS  
ALFALFA — RED CLOVER — GRAIN SORGHUM — TOBACCO  
SUDANGRASS AND SUDANGRASS SORGHUM HYBRIDS  
PEARLMILLETS**

**Data for 1965 with Summaries of Results  
from Previous Years**

by  
**Charles R. Graves**  
Assistant Professor of Agronomy

### **STATION HATCH PROJECT NO. 33**

**Evaluation of the Performance of Varieties of Field Crops**

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## **RECOMMENDED CROP VARIETIES**

(Listed Alphabetically)

### **Corn Hybrids**

**White**—DeKalb 925<sup>1</sup>, Dixie 29, Dixie 29B, Dixie 29R, Dixie 33, Dixie 77, Funk G-580W, Funk G-795W, P.A.G. 653W, Pioneer 509W, Princeton 990-A, Stull's 400WA, Tenn. 501, Tenn. 501R.

**Yellow**—DeKalb 1006, DeKalb 805<sup>1</sup>, Dixie 22, Embro 222TA, Funk G-710AA, Funk G-711AA, McCurdy 999<sup>1</sup>, P.A.G. SX-59, Pioneer 309A<sup>1</sup>, Pioneer 309B, Pioneer 3048, Pioneer 310, Tenn. 604.

### **Cotton**

**Early**—Auburn M, DeKalb 108<sup>1</sup>, Dixie King II, Rex Smooth-leaf, Stardel.

**Late**—Auburn 56, Carolina Queen, Stoneville 213.

**Oats**—Fall-Seeded—Blount, Forkeddeer.

**Wheat**—Knox, Knox 62, Monon, Reed, Seneca.

**Barley**—Dayton, Hudson, Kenbar

**Alfalfa**—Atlantic, Buffalo, Narragansett, Williamsburg.

**Red Clover**—Kenland.

**Soybeans**—Dorman, Hill, Hood, Ogden, Lee.

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<sup>1</sup>Present plans indicate that these varieties will not be recommended after this year.

**Grain Sorghum**—AKS 614, DeKalb E-57, Frontier 400C, Lindsey 744, McCurdy 70, P.A.G. 515, P.A.G. 430, R.S. 610.

**Burley Tobacco**—Burley 1, Burley 11A, Burley 21, Burley 37, Burley 49, MS Burley 21 X Ky. 10.

**Dark Fired Tobacco**—Broad Leaf Madole, Black Mammoth, DF-516.

**Sudangrasses and Sudangrass-sorghum hybrids**—Beefbuilder T (Asgrow), GHS-1 (Tennessee Farmers Co-op.), Grazemaster (Taylor-Evans), Grazer A (Asgrow), Green Graze (Green Bros.), Greenlan (Caladino), Green-M (Hunt & Tipps), Hay-grazer (Taylor-Evans), Hi-dan 38 (Frontier), Kow Kandy (R. G. Young), Lindsey 77F, Mor-Su (Rudy-Patrick), Piper, Sordan (Northrup-King), Su-1 (Rudy-Patrick), Su-Chow 34 (Pfister), Su-Chow 35 (Pfister), Sudax SX-11 (DeKalb), Sudax SX-12 (DeKalb), Suhi-1, Sure-Graze (Dorman), Sweet Sioux (Paymaster), Trudan I (Northrup-King).

**Pearlmilletts**—Gahi-1, Starr.

# CHARACTERISTICS OF RECOMMENDED VARIETIES (VARIETIES LISTED ALPHABETICALLY)

## CORN HYBRIDS

Variety	Erect plants	Ears/ 100 plants	Grain Quality	Husk cover	Ear ht.	Grain moisture at harvest
<b>White—Full Season</b>	%	No.			In.	%
Dixie 29 .....	81	140	Med.-Good	Good	61	21.4
Dixie 29B .....	78	141	Med.-Good	Good	61	22.0
Dixie 29R .....	80	137	Med.-Good	Good	61	22.6
Dixie 33 .....	81	148	Med.	Good	66	20.9
Dixie 77 .....	87	132	Good	Good	60	22.6
Funk G-580W .....	81	143	Good	Good	55	20.2
Funk G-795W .....	81	168	Med.-Good	Good	56	20.8
P.A.G. 653W .....	79	168	Good-Exc.	Good	58	20.1
<b>Yellow—Full Season</b>						
DeKalb 1006 .....	87	113	Good	Med.-Good	63	20.3
Dixie 22 .....	85	126	Good	Good	65	22.6
Embro 222TA .....	86	113	Med.-Good	Med.-Good	63	23.0
Funk G-711AA .....	83	116	Med.-Good	Med.-Good	60	22.6
Funk G-710AA .....	87	137	Good	Med.-Good	64	23.2
Pioneer 309B .....	86	120	Good	Good	55	21.5
Pioneer 3048 .....	89	117	Good	Good	63	23.4
<b>White—Medium Season</b>						
DeKalb 9251 .....	83	109	Med.-Good	Med.-Good	54	20.5
Princeton 990-A .....	88	102	Med.	Med.	54	20.4
Pioneer 509W .....	84	129	Med.	Med.-Good	55	20.5
Stull's 400WA .....	84	107	Med.-Good	Med.-Good	53	20.9
Tenn. 501 .....	79	144	Med.-Good	Med.-Good	52	20.7
Tenn. 501R .....	82	155	Med.-Good	Good	53	20.7
<b>Yellow—Medium Season</b>						
DeKalb 8051 .....	86	96	Med.-Good	Fair-Med.	46	17.5
McCurdy 9991 .....	85	114	Med.-Good	Med.-Good	55	21.9
P.A.G. SX-59 .....	91	104	Good	Med.	50	20.8
Pioneer 309A1 .....	89	112	Med.-Good	Med.-Good	58	22.3
Pioneer 310 .....	87	118	Med.-Good	Med.	51	19.4
Tenn. 604 .....	82	138	Good	Med.-Good	55	19.4

\*Present plans indicate that these varieties will not be recommended after this year.

## Cotton

**Auburn M**—A very early-maturing medium to large-boll variety which has a lint percentage of about 36 to 38. Fiber properties: Fair (UHM) length with average strength and fineness. Resistant to fusarium wilt.

**Auburn 56**—A late, medium-boll variety with a lint percentage of about 36 to 38. Fiber properties: Average (UHM) length with good strength and fineness. Plant type variable. Resistant to fusarium wilt and has tolerance to verticillium wilt. Auburn 56 has a high degree of storm resistance.

**Carolina Queen**—A late, medium-boll variety with a lint percentage of about 36 to 39. Fiber properties are good. Resistant to fusarium wilt. Tall growth habit.

**DeKalb 108<sup>1</sup>**—A strain-cross, medium-early variety that has medium to large bolls. Lint percentage 35 to 37. Good (UHM) length, fineness, and average strength. Resistant to fusarium wilt.

**Dixie King II**—A medium-early variety that has large bolls. Lint percentage 35 to 37. Good (UHM) length, fineness, and medium strength. Tolerant to fusarium wilt.

**Rex Smoothleaf**—An early, large-boll variety with a lint percentage of about 35 to 37. Fiber properties: Medium (UHM) length, and fair strength and fineness. Resistant to fusarium wilt and one strain of bacterial blight.

**Stardel**—An early, small-boll variety with a lint percentage of about 36 to 38. Fiber properties: Medium (UHM) length and good strength and fineness. Very susceptible to verticillium wilt.

**Stoneville 213**—A medium-late, small-boll variety with a lint percentage of 36 to 39. Fiber properties: Fair (UHM) length, and good strength and fineness.

## Oats

### Fall-Seeded:

**Blount**—A short, stiff-strawed variety slightly less winter-hardy than Forkeddeer. Less lodging than LeConte and about equal in winter hardiness. Similar to LeConte in vegetative growth and appearance except that the panicle is slightly longer and more spreading. Has out-yielded most other varieties over a 5-year period. Maturity date falls between



LeConte and Forkeddeer. Due to its lodging resistance, Blount is suited to relatively-high level of fertility.

**Forkeddeer**—A very winter-hardy variety with yellow grain. Has a tendency to lodge under conditions of high fertility. Medium tall; matures a few days later than Victorgrain 48-93. Susceptible to crown rust.

## Wheat

**Knox**—A very early winter-hardy, white-chaffed, variety with medium short straw. Semi-upright type with fair to poor standing ability. Due to its earliness Knox may escape serious damage by stem rust. It is resistant to some races of leaf rust in the mature plant stage.

**Knox 62**—Similar to Knox except that it is Hessian fly resistant.

**Monon**—A very early winter-hardy, white chaffed, variety with moderately stiff straw which is a few inches shorter than Knox. Monon has a head type similar to Knox but has shorter tip-awns. The variety is resistant to certain races of leaf rust in the mature plant stage. It is susceptible to stem rust but may escape serious damage from this disease due to its earliness.

**Reed**—A late-maturing variety with good straw strength. Reed is resistant to Hessian fly, leaf rust, and soil-borne mosaic. Moderately susceptible to stem rust, powdery mildew, and loose smut.

**Seneca**—A red-chaffed variety of medium height and fair standing ability. Susceptible to leaf and stem rust. Matures later than Knox or Monon. Not recommended for West Tennessee.

## Barley

**Dayton**—A winter-hardy, semi-rough-awned, early variety with good standing ability. Medium tall; susceptible to mildew and scald.

**Hudson**—A winter-hardy, rough-awned variety with fair standing ability. It is 2 to 3 days earlier than Holston. Good resistance to mildew and scald.

**Kenbar**—A winter-hardy variety of medium height. About

the same maturity as Dayton. Yields slightly less than Dayton. Good resistance to mildew and fair resistance to scald.

## **Alfalfa**

**Atlantic**—A variegated variety developed from selections having a wide genetic background. It has yielded well all over the state. Atlantic is somewhat tolerant but not resistant to bacterial wilt.

**Buffalo**—Selected out of an old Kansas common strain and is resistant to bacterial wilt. Buffalo is well adapted to Tennessee conditions and is one of the leading varieties sold in the state.

**Narragansett**—A synthetic variety of very diverse origin. It recovers somewhat slower than other adapted varieties after cutting. Narragansett is fine-stemmed and yields as well as Atlantic. Seed is in short supply in Tennessee.

**Williamsburg**—Developed from selections out of Kansas Common. It is susceptible to bacterial wilt. This variety has been a good producer and is well adapted over the state.

## **Red Clover**

**Kenland**—Kenland is a variety resistant to southern anthracnose and tolerant to powdery mildew. It has some tolerance to Sclerotinia crown rot and is widely adapted. It is a synthetic variety made by combining several strains from Kentucky, Tennessee, Virginia, North Carolina, and Missouri. It has performed best in Tennessee of all commercial varieties tested.

## **Soybeans**

**Dorman**—A variety having large yellow beans with a buff-colored hilum. Matures approximately 16 days earlier than Ogden. Dorman holds its seed very well, but not as well as Lee. It has good seed quality and oil content similar to Ogden. The plants have heavy foliage with leaves being very large when compared with other varieties.

**Lee**—Matures approximately 1 week later than Ogden. Lee has tawny pubescence and purple flowers, whereas Ogden has gray pubescence and purple flowers. Lee has more resistance to shattering than the other recommended varieties. Lee is

reported to be resistant to the diseases bacterial pustule, wildfire, frog-eye, and purple seed stain. Also it is supposed to be moderately resistant to target spot. The seed are yellow with a black hilum. Lee has a tendency to lodge under some conditions.

**Hill**—Hill matures about 2 days earlier than Dorman. This variety has more resistance to the major foliage diseases, lodging, and shattering than Dorman, but is not quite as resistant to shattering as Lee.

**Hood**—Hood matures about 10 days earlier than Lee. It is supposed to have resistance to bacterial pustule, wildfire, frog-eye, and target leaf spot disease. The seed are yellow with a buff hilum.

**Ogden**—This variety was developed by the University of Tennessee Agricultural Experiment Station and is widely grown in the Southeastern states. It produces high yields of seed with a good oil content. Ogden has a tendency to shatter and should be harvested shortly after maturity. It is a mid-season variety with about the same maturity as Hood. Ogden has olive-colored beans with a brownish-black hilum.

### **Grain Sorghum Hybrids**

**AKS 614**—A bird-resistant variety of medium maturity with an open type head in compactness.

**DeKalb E-57**—A variety of late maturity with an open type-head in compactness.

**Frontier 400C**—A variety of early maturity with heads tight in compactness.

**Lindsey 744**—A variety of early maturity with a head medium in compactness.

**McCurdy 70**—A variety of medium maturity, red seed on heads of tight compactness.

**P.A.G. 515**—A variety of late maturity with heads of tight compactness.

**P.A.G. 430**—A variety of early maturity with heads of medium compactness.

**R. S. 610**—A medium-maturing hybrid with heads tight in compactness.

## BURLEY TOBACCO

**Burley 1**—An upright-leaf type variety which produces high yields of good quality tobacco. It has good resistance to mosaic and low resistance to black root rot. This variety performs best when topped early and kept suckered.

**Burley 11-A**—A brittle, drooping leaf variety which has good resistance to black shank, black root rot, and fusarium wilt. This variety is only recommended on farms where both black shank and fusarium wilt are present. This variety will not yield as well as Burley 37, but has a little more resistance to black root rot and fusarium wilt. Burley 11-A is early-maturing and is often ready to harvest 1 week earlier than other varieties.

**Burley 21**—A very upright-leaf type variety which produces good yields of fine quality tobacco. It has excellent resistance to wildfire and mosaic and fair resistance to black root rot. Plants are more vigorous and grow off faster in plant beds than most other varieties. Burley 21 is the most widely grown variety in the state.

**Burley 37**—An upright-leaf type variety which has good resistance to black shank, excellent resistance to wildfire and fair resistance to black root rot and fusarium wilt. This variety is recommended on farms where black shank is a problem. In the absence of black shank, Burley 37 will not yield as well as Burley 21.

**Burley 49**—An upright-leaf type variety which has good resistance to black shank, excellent resistance to black root rot, wildfire, mosaic and fair resistance to fusarium wilt. This variety is recommended on farms where black shank and black root rot are causing problems. In the absence of black shank and black root rot, Burley 49 will not yield as well as Burley 21.

**M S Bu. 21 x Ky. 10**—A semi-drooping leaf type hybrid which has excellent resistance to wildfire and mosaic and fair resistance to black root rot. Yields about the same as Ky. 10 but more than Burley 21. M S Bu. 21 x Ky. 10 hybrid is better in quality than Ky. 10, but not as good as Burley 21.

### Dark Fire-Cured Tobacco

**Broad Leaf Madole**—A relatively high-yielding, high-acre-value

variety. Susceptible to mosaic and wildfire.

**Black Mammoth**—Black Mammoth produces a leaf somewhat darker and broader than Madole. Usually it does not droop quite as much as Madole. Susceptible to mosaic and wildfire.

**DF-516**—A broad-leaved, open-growing, dark-green tobacco that is resistant to both mosaic and wildfire. Because of the large, broad leaves, this variety is perhaps best suited to the production of cutting and wrapping tobacco. The leaf spacing of DF-516 is about the same as that of Madole.

#### **Sudangrasses and Sudangrass-sorghum hybrids — Pearl millets**

For a description of some of the recommended varieties see the section "Performance of Summer Annual Grasses for Grazing and Green-Chopping" on page 65 of this bulletin.

## **1965 PERFORMANCE TRIALS OF FIELD CROP VARIETIES**

**CORN — COTTON — OATS — WHEAT — BARLEY  
SOYBEANS — ALFALFA — RED CLOVER — GRAIN  
SORGHUM — TOBACCO  
SUDANGRASS AND SUDANGRASS-SORGHUM HYBRIDS  
PEARLMILLETS**

**Data for 1965 with summaries of results from previous years**

### **INTRODUCTION**

The purpose of the project, "Evaluation of the Performance of varieties of Field Crops," is to test field crop varieties available to farmers of this and neighboring states, as well as the best experimental varieties being developed by experiment stations and other agencies.

The tests were conducted using field plot designs, fertility levels, and experimental techniques that have been found suitable for each crop.

Committees composed of specialists from the research, resident instruction, and extension staffs of the University of Tennessee College of Agriculture study the performance data and determine varieties to be recommended.

In order for a variety to be recommended, it must yield well and have other characteristics suitable for Tennessee conditions.

## **PRESENTATION OF DATA**

The tests were conducted in each of the principal agricultural regions of the State where the specific crop is grown. Plots of each variety were replicated several times at each location. Locations of field tests are given in each table of data. An average of the performance of a variety across the area of adaptation and over a period of years is the best basis for evaluation.

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first.

The least significant difference (L.S.D.) values at the 5% level for the 1965 tests are shown at the bottom of each table. The yields of any two varieties being compared must differ by at least this amount in order for the varieties to be considered different in yielding ability. Also, coefficient of variation values (C.V. %) are shown at the bottom of each table. At each location where tests were conducted in 1965 the soil types are reported at the end of the table.

## **CORN**

The 1965 Full-season State corn hybrid tests were conducted at 4 locations and the early-maturing tests were conducted at 7 locations. There were 30 entries in the full-season and 40 entries in the early-maturing test. The experimental design was a randomized complete block with 6 replications.

Both tests at Knoxville and Fort Pillow were rated for virus disease. These data are presented in Tables 5 and 11. No virus disease ratings were made at any of the other state variety test locations because very few affected plants were observed.

Data in Tables 6 and 12 were furnished by L. M. Josephson, and J. W. Hilty of the Tennessee Agricultural Experiment Station at

Knoxville. These data were obtained from tests at four locations where the virus disease occurred in previous years. The data represent two planting dates and two replications at each location.

Individual plants were evaluated on the basis of the following severity grades:

- 0 = No apparent symptoms.
- 1 = Top 2 or 3 leaves with mottling, no stunting.
- 2 = Plant above the ear mottled and discolored; none or very little stunting.
- 3 = Plant above ear discolored and stunted, ear reduced in size.
- 4 = Entire plant discolored and stunted, small or no ear.
- 5 = Plant completely collapsed, no ear.

A severity index for each entry was determined by multiplying the number of plants in each grade by the grade value, and the sum of these products was divided by the total number of plants.

Hybrids with a severity index of 1.00 or less probably were not appreciably reduced in yield, while those above 3.00 would have less than 50% of normal yield. Anyone previously experiencing trouble with the virus disease may wish to select a hybrid that has a low severity index.

Dixie 29 and Pioneer 309A were included in both the full-season and the early-maturing tests to provide some measure of relative performance of the two groups.

Amounts of fertilizer applied to each test were considered sufficient for corn yields over 100 bushels per acre. All tests were planted at the rate of 28,000 plants per acre and thinned to give a stand of 14,000 plants.

The "average yields" and characteristics of the hybrids tested in the early maturing group are presented in Tables 2 and 4. "Erect plants" is a measure of a variety's resistance or susceptibility to lodging. The higher the number, the better the standing ability of the hybrid. "Ears/100 plants" is a measure of the prolificacy of a variety. Single-eared hybrids will have a rating of about 100, whereas prolific hybrids under good weather conditions at about 14,000 plants per acre usually have a rating of 120 to 150.

"Grain quality" and "Husk cover" are ratings taken at the

time of harvest. "Ear height" is a measure of the average distance from the ground to the ears.

"Grain moisture" is used to calculate yield (yields are expressed in bushels per acre, adjusted to 15.5% moisture), and measures relative maturity of the hybrids. A high moisture at harvest indicates a later-maturing hybrid and a low moisture indicates an earlier-maturity hybrid.

The new hybrid Tenn. 501R was tested as T5101.

Data are presented in Table 1 through 12.



**Table 1. Corn: Yields of 40 early-maturing hybrids tested at seven locations in 1965.**

Color	Hybrid	State avg.	Greene- ville <sup>1</sup>	Knox- ville <sup>2</sup>	Spring Hill <sup>3</sup>	Martin <sup>4</sup>	Spring- field <sup>5</sup>	Cross- ville <sup>6</sup>	Jack- son <sup>7</sup>
<b>Bushels per Acre</b>									
W SX	Funk G-4831 .....	132	136	157	139	123	163	108	96
W	Pioneer 509W .....	125	148	147	132	116	130	104	100
W	Dixie 29 <sup>8</sup> .....	125	144	143	131	121	150	92	94
W	P.A.G. 633W .....	122	140	131	136	113	138	101	98
W	Stull's 400WA .....	119	126	140	127	110	135	100	97
Y	Tenn. 604 .....	116	141	128	116	110	130	96	86
W	Princeton 990-A .....	115	130	127	115	102	132	102	99
W	Funk G-508W .....	115	127	122	118	108	130	113	86
Y SX	P.A.G. SX-59 .....	114	123	119	117	112	130	99	99
Y SX	P.A.G. SX-29 .....	114	120	122	116	118	127	98	98
W	Tenn. 501 .....	113	119	144	116	107	130	83	90
Y	Pioneer 310 .....	113	132	120	114	107	132	92	91
Y SX	Stull's 807Y .....	112	122	108	116	103	126	106	100
Y	Watson 430 .....	111	120	109	110	109	131	100	95
Y SX	McCurdy 972X7 .....	110	119	114	114	96	124	107	94
Y	McCurdy 999 .....	109	115	119	113	98	124	98	94
Y	Funk G-144 .....	109	120	113	113	99	124	100	92
Y SX	P.A.G. SX19 .....	108	109	117	109	110	120	94	100
Y	Funk G-146 .....	108	120	114	111	96	126	99	92
Y	Pioneer 309A <sup>8</sup> .....	108	114	122	102	109	127	95	88
Y	V.P.I. 646 .....	107	113	107	106	110	126	97	88
Y SX	McCurdy 7X11 .....	107	115	110	109	107	124	90	91
Y SX	DeKalb 805 .....	106	121	118	108	92	131	93	80
Y	Ken-Bred E-20YA .....	106	114	103	105	102	130	90	97
Y	Watson 401A .....	106	117	111	106	83	131	100	91

Table 1.— (Continued)

Color	Hybrid	State avg.	Greene- ville <sup>1</sup>	Knox- ville <sup>2</sup>	Spring Hill <sup>3</sup>	Martin <sup>4</sup>	Spring- field <sup>5</sup>	Cross- ville <sup>6</sup>	Jack- son <sup>7</sup>
Bushels per Acre									
Y	P.A.G. 437 .....	105	115	108	106	97	121	96	90
Y SX	Embryo X-4 .....	103	109	103	104	109	121	84	90
Y	Princeton 890-AA .....	102	105	114	104	97	118	86	89
Y	Stull's 101YA .....	100	104	102	101	100	115	92	86
Y	Princeton 8-X .....	100	114	97	102	97	112	92	85
Y SX	DeKalb XL-362 .....	99	111	95	100	98	117	86	89
Y	V.P.I. 648 .....	99	109	96	101	90	119	100	75
Y	Horn's HS 118A .....	96	104	96	92	99	110	98	76
Y	Princeton 8-A .....	96	111	98	94	97	108	90	74
Y	Horn's HS 654 .....	94	106	92	99	89	115	79	82
Y SX	DeKalb XL-65 .....	93	104	93	94	99	109	76	79
Y SX	DeKalb XL-45 .....	86	99	83	91	81	96	74	80
<b>Experimentals:</b>									
Y	T3003 .....	120	138	127	129	116	144	101	86
W	T5101 (Tenn. 501R) .....	117	120	141	122	114	133	93	94
Y	T0044B .....	115	127	115	123	105	138	109	85
<hr/>									
	L.S.D. (.05) .....	-	15.0	12.4	10.4	10.8	13.7	16.1	9.9
	C. V. % .....	-	11.1	9.4	8.3	9.2	9.6	14.9	9.7

<sup>1</sup>Waynesboro loam, (2% to 5% slopes).  
Hermitage silt loam, (2% to 5% slopes).

<sup>2</sup>Sequatchie silt loam, (0% to 2% slopes).

<sup>3</sup>Maury silt loam, (0% to 2% slopes).

Huntington silt loam, phosphatic  
alluvium (0% to 2% slopes).

<sup>4</sup>Collins silt loam, (0% to 2% slopes).

<sup>5</sup>Ennis silt loam, (0% to 2% slopes).

<sup>6</sup>Hartsells loam, eroded, (2% to 5% slopes).

<sup>7</sup>Loring silt loam, (2% to 5% slopes).

<sup>8</sup>Also included in test of full-season hybrids.

**Table 2. Corn: Characteristics of 40 early-maturing hybrids  
tested at seven locations in 1965**

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	%
W SX	Funk G-4831 .....	132	88	130	Good	Good-Exc.	55	21.8
W	Pioneer 509W .....	125	88	145	Med.	Med.-Good	55	17.7
W	Dixie 29 <sup>1</sup> .....	125	82	165	Med.	Good	58	20.3
W	P.A.G. 633W .....	122	80	165	Good	Good	58	18.8
W	Stull's 400WA .....	119	90	115	Good	Good	51	18.9
Y	Tenn. 604 .....	116	83	155	Good	Med.-Good	54	17.3
W	Princeton 990-A .....	115	92	105	Med.	Med.	57	18.3
W	Funk G-508W .....	115	92	110	Med.-Good	Med.-Good	54	19.4
18 Y SX	P.A.G. SX-59 .....	114	92	105	Good	Med.-Good	50	18.7
Y SX	P.A.G. SX-29 .....	114	95	120	Med.	Fair	52	15.9
W	Tenn. 501 .....	113	71	165	Good	Good	51	18.5
Y	Pioneer 310 .....	113	85	125	Med.-Good	Med.	51	17.7
Y SX	Stull's 807Y .....	112	90	100	Good	Med.-Good	51	16.9
Y	Watson 430 .....	111	91	105	Good	Good	51	19.1
Y SX	McCurdy 972X7 .....	110	84	105	Good	Med.-Good	53	17.3
Y	McCurdy 999 .....	109	77	120	Med.-Good	Good	55	19.0
Y	Funk G-144 .....	109	90	115	Med.	Med.	49	17.5
Y SX	P.A.G. SX19 .....	108	94	110	Fair-Med.	Fair	58	17.2
Y	Funk G-146 .....	108	89	115	Med.-Good	Med.	50	17.3
Y	Pioneer 309A <sup>1</sup> .....	108	89	115	Med.-Good	Good	60	19.2
Y	V.P.I. 646 .....	107	94	105	Med.	Fair-Med.	55	17.5
Y SX	McCurdy 7X11 .....	107	88	100	Good	Fair	49	17.3
Y SX	DeKalb 805 .....	106	90	95	Med.-Good	Med.	46	16.2
Y	Ken-Bred E-20YA .....	106	85	110	Med.	Fair-Med.	51	17.0
Y	Watson 401A .....	106	88	105	Good	Med.-Good	51	19.6

Table 2.—(Continued)

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	In.
Y	P.A.G. 437 .....	105	93	115	Med.	Fair-Med.	50	15.9
Y SX	Embro X-4 .....	103	90	110	Med.-Good	Fair-Med.	51	17.7
Y	Princeton 890-AA .....	102	84	110	Med.	Fair-Med.	50	17.5
Y	Stull's 101YA .....	100	86	105	Med.-Good	Med.	53	17.1
Y	Princeton 8-X .....	100	95	110	Fair-Med.	Fair	47	16.5
19 Y SX	DeKalb XL-362 .....	99	90	115	Fair	Fair	45	15.8
Y	V.P.I. 648 .....	99	91	105	Med.	Fair	53	18.1
Y	Horn's HS 118A .....	96	89	110	Med.	Fair	51	16.5
Y	Princeton 8-A .....	96	95	105	Fair-Med.	Med.	51	16.9
Y	Horn's HS 654 .....	94	91	105	Fair	Fair	44	15.5
Y SX	DeKalb XL-65 .....	93	93	115	Fair-Med.	Fair	47	16.0
Y SX	DeKalb XL-45 .....	86	94	105	Fair	Fair	38	14.9
<b>Experimentals:</b>								
Y	T3003 .....	120	81	145	Med.-Good	Good	59	18.6
W	T5101 (Tenn. 501R) .....	117	82	155	Med.-Good	Good	53	18.9
Y	T0044B .....	115	80	150	Med.-Good	Good	52	18.1

<sup>a</sup>Also included in test of full-season hybrids.

SX—Denotes single cross or a special cross hybrid.

**Table 3. Corn: Yields of 19 early-maturing hybrids tested  
at seven locations for 2 or 3 years**

Color	Hybrid	Avg.	Knox- ville 1964-65	Greene- ville 1963-65	Cross- ville 1963-65	Jack- son 1963-65	Spring Hill 1963-65	Spring- field 1963-65	Martin 1963-65
<b>Bushels per acre</b>									
W	Dixie 29 <sup>1</sup> .....	114	123	122	112	86	120	126	108
W	P.A.G. 633 .....	111	114	115	106	95	119	122	103
Y SX	P.A.G. SX-59 .....	111	112	117	112	94	110	118	110
W	Pioneer 509 .....	110	122	119	105	91	118	115	103
W	Stull's 400WA .....	108	122	109	109	90	115	121	94
Y	Pioneer 310 .....	108	110	121	108	88	111	119	100
W	Princeton 990-A .....	108	119	110	105	91	114	116	100
Y SX	P.A.G. SX-29 .....	107	111	114	101	93	111	117	104
W	Tenn. 501 .....	107	121	108	105	86	113	117	102
Y	Tenn. 604 .....	106	112	113	104	87	108	116	99
Y SX	McCurdy 7X11 .....	105	104	109	106	90	108	112	104
Y SX	Stull's 807Y .....	105	97	106	112	92	107	115	98
Y SX	McCurdy 972X7 .....	104	104	106	108	91	112	112	94
Y	Pioneer 309A <sup>1</sup> .....	102	110	103	107	87	102	112	92
Y	McCurdy 999 .....	101	114	100	104	85	105	111	93
Y SX	DeKalb 805 .....	101	103	101	106	84	101	118	92
Y	Stull's 101YA .....	100	95	100	103	86	102	110	96
Y	Funk G-144 .....	100	103	99	99	86	104	107	97
<b>Experimental:</b>									
Y	T0044B .....	108	106	113	112	85	114	125	101

<sup>1</sup>Also included in test of full-season hybrids.

SX—Denotes a single cross or a special cross hybrid.

**Table 4. Corn: Yields and other characteristics of early-maturing hybrids tested for 2 or 3 years**

Color	Hybrid	3 Yr. avg. 1963- 1965	2 Yr. avg. 1964- 1965	Erect plants	Fars/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	Bu./A.	%	No.			In.	%
W	Dixie 291 .....	114	112	83	144	Med.-Good	Good	58	23.5
W	P.A.G. 633 .....	111	107	81	144	Good	Good	56	20.8
Y SX	P.A.G. SX-59 .....	111	108	91	104	Good	Med.	50	20.8
W	Pioneer 509 .....	110	108	84	129	Med.	Med.-Good	55	20.5
W	Stull's 400WA .....	108	106	84	107	Med.-Good	Med.-Good	53	20.9
Y	Pioneer 310 .....	108	104	87	118	Med.-Good	Med.	51	19.4
W	Princeton 990-A .....	108	105	88	102	Med.	Med.	54	20.4
Y SX	P.A.G. SX-29 .....	107	106	93	111	Med.	Fair	51	17.7
W	Tenn. 501 .....	107	104	79	144	Med.-Good	Med.-Good	52	20.7
Y	Tenn. 604 .....	106	102	82	138	Good	Med.-Good	55	19.4
21 Y SX	McCurdy 7X11 .....	105	101	91	100	Good	Fair	49	19.0
Y SX	Stull's 807Y .....	105	101	88	99	Med.-Good	Fair-Med.	50	18.5
Y SX	McCurdy 972X7 .....	104	99	86	104	Good	Med.	54	18.8
Y	Pioneer 309A <sup>1</sup> .....	102	99	89	112	Med.-Good	Med.-Good	58	22.3
Y	McCurdy 999 .....	101	100	85	114	Med.-Good	Med.-Good	55	20.9
Y SX	DeKalb 805 .....	101	97	86	96	Med.-Good	Fair-Med.	46	17.5
Y	Stull's 101YA .....	100	94	87	104	Med.-Good	Med.	52	19.3
Y	Funk G-144 .....	100	97	89	110	Med.	Med.	47	18.9
Y	Watson 401A .....	—	100	91	105	Med.-Good	Med.-Good	49	21.6
Y	V.P.I. 646 .....	—	97	94	100	Med.	Fair-Med.	52	19.6
Y	Prince*on 8-X .....	—	92	96	110	Fair-Med.	Fair	46	18.2
Y	Horn's HS 118A .....	—	88	88	105	Fair-Med.	Fair-Med.	49	18.4
Y	V.P.I. 648 .....	—	88	92	100	Fair-Med.	Fair	49	19.8
Y	Horn's HS 654 .....	—	85	92	102	Fair	Fair	43	17.2
<b>Experimental:</b>									
Y	T0044B .....	108	107	86	138	Med.-Good	Med.	52	20.6

<sup>1</sup>Also included in tests of full-season hybrids.

SX—Denotes single cross or special cross hybrid.

**Table 5. Corn: Virus reaction of 40 early-maturing corn hybrids tested at two locations in 1965**

Color	Hybrid	Knoxville <sup>1</sup>		Fort Pillow	
		Diseased	Severity Index	Diseased	Severity Index
		%		%	
W SX	Funk G-4831 .....	0.0	0.00	0.0	0.00
W	Pioneer 509W .....	2.5	0.02	2.6	0.02
W	Dixie 29 .....	4.2	0.04	2.5	0.02
W	P.A.G. 633W .....	4.2	0.06	10.0	0.60
W	Stull's 400WA .....	6.7	0.13	23.1	0.69
Y	Tenn. 604 .....	8.3	0.12	0.0	0.00
W	Princeton 990-A .....	3.2	0.04	5.1	0.20
W	Funk G-508W .....	15.8	0.40	7.9	0.29
Y SX	P.A.G. SX-59 .....	3.2	0.05	12.8	0.28
Y SX	P.A.G. SX-29 .....	4.2	0.05	23.1	0.53
W	Tenn. 501 .....	3.2	0.08	2.6	0.13
Y	Pioneer 310 .....	28.3	0.57	52.5	1.47
Y SX	Stull's 807Y .....	36.7	0.66	63.2	2.27
Y	Watson 430 .....	28.3	0.76	57.9	1.65
Y SX	McCurdy 972X7 .....	9.9	0.15	45.9	1.98
Y	McCurdy 999 .....	15.0	0.38	41.0	1.07
Y	Funk G-144 .....	20.8	0.52	37.5	2.25
Y SX	P.A.G. SX-19 .....	0.0	0.00	7.5	0.08
Y	Funk G-146 .....	15.0	0.34	36.8	1.22
Y	Pioneer 309A .....	4.1	0.04	16.2	0.32
Y	V.P.I. 646 .....	17.5	0.40	31.6	0.88
Y SX	McCurdy 7X11 .....	31.7	0.51	66.7	2.00
Y SX	DeKalb 805 .....	44.2	0.80	75.0	1.80
Y	Ken-Bred E-20YA .....	24.4	0.48	23.7	0.54
Y	Watson 401A .....	15.8	0.36	37.5	0.75
Y	P.A.G. 437 .....	13.3	0.23	28.2	0.39
Y SX	Embro X-4 .....	32.5	0.75	37.8	1.06
Y	Princeton 890-AA .....	1.7	0.02	5.0	0.10
Y	Stull's 101YA .....	24.2	0.46	72.0	2.87
Y	Princeton 8-X .....	41.7	0.96	52.6	1.00
Y SX	DeKalb XL362 .....	27.5	0.74	72.8	2.87
Y	V.P.I. 648 .....	32.5	0.72	33.3	0.67
Y	Horn's HS 118A .....	33.6	0.82	29.7	2.68
Y	Princeton 8-A .....	24.2	0.48	45.0	1.35
Y	Horn's HS 654 .....	28.3	0.48	35.0	0.70
Y SX	DeKalb XL-65 .....	40.8	0.90	45.0	0.90
Y SX	DeKalb XL-45 .....	30.0	0.57	66.7	1.67
<b>Experimentals:</b>					
Y	T3003 .....	15.8	0.19	7.5	0.15
W	T5101 .....	4.1	0.04	0.0	0.00
Y	T0044B .....	5.8	0.08	10.0	0.15

<sup>1</sup>State variety test planted on April 29.

**Table 6. Corn: Virus reaction of 40 early-maturing corn hybrids grown at four locations in 1965**

Color	Hybrid	Knoxville (Knox Co.) <sup>1</sup>		Waverly (Humphreys Co.)		Savannah (Hardin Co.)		Memphis (Shelby Co.)	
		Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index
		%		%		%		%	
W SX	Funk G-4831 .....	12	0.20	15	0.30	5	0.20	56	1.20
W	Pioneer 509W .....	10	0.15	45	0.90	20	0.60	47	0.80
W	P.A.G. 633W .....	57	1.55	35	0.60	58	2.65	63	1.30
W	Stull's 400WA .....	24	0.65	37	0.60	6	0.07	57	1.40
Y	Tenn. 604 .....	13	0.25	26	0.30	17	0.45	78	1.50
33	W Princeton 990-A .....	58	1.40	27	0.50	28	1.10	29	0.40
	W Funk G-508W .....	43	1.00	72	1.70	18	0.45	89	2.40
	Y SX P.A.G. SX-59 .....	32	0.50	42	0.90	17	0.45	88	1.60
	Y SX P.A.G. SX-29 .....	17	0.20	35	0.80	32	1.05	74	1.20
	W Tenn. 501 .....	10	0.10	21	0.30	9	0.35	72	1.50
Y	Pioneer 310 .....	67	1.70	75	2.00	22	0.45	54	0.80
Y SX	Stull's 807Y .....	57	1.40	56	1.20	34	1.00	74	1.30
Y	Watson 430 .....	41	0.95	67	1.40	27	0.70	81	1.10
Y SX	McCurdy 972X7 .....	70	1.55	95	3.20	34	0.85	88	2.10
Y	McCurdy 999 .....	38	1.05	58	1.30	24	0.45	82	1.20
Y	Funk G-144 .....	90	2.60	82	2.10	36	1.10	100	2.30
Y SX	P.A.G. SX-19 .....	0	0.00	20	0.50	10	0.75	45	0.70
Y	Funk G-146 .....	64	1.70	90	2.60	32	1.10	88	2.40
Y	Pioneer 309A .....	17	0.45	41	1.00	16	0.45	56	1.10
Y	V.P.I. 646 .....	44	1.05	75	1.70	39	1.40	100	2.30



Table 6.—(Continued)

Color	Hybrid	Knoxville (Knox Co.) <sup>1</sup>		Waverly (Humphreys Co.)		Savannah (Hardin Co.)		Memphis (Shelby Co.)	
		Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index
		%		%		%		%	
Y SX	McCurdy 7X11 .....	46	1.20	47	1.10	25	0.95	88	1.80
Y SX	DeKalb 805 .....	97	3.00	100	3.20	83	2.65	100	2.00
Y	Ken-Bred E-20YA .....	68	1.70	84	2.30	16	0.30	95	2.70
Y	Watson 401A .....	44	1.20	74	1.70	29	1.00	56	0.90
Y	P.A.G. 437 .....	62	1.70	44	0.90	50	1.30	84	1.50
Y SX	Embro X-4 .....	44	1.40	86	2.10	37	1.30	88	1.80
Y	Princeton 890-AA .....	46	1.25	42	0.70	32	0.90	75	1.10
24 Y	Stull's 101YA .....	54	1.45	74	2.40	43	1.35	89	1.40
Y	Princeton 8-X .....	60	1.95	84	1.90	57	1.95	78	1.70
Y SX	DeKalb XL362 .....	100	3.75	95	3.40	83	3.65	87	3.10
Y	V.P.I. 648 .....	57	1.30	76	1.80	44	1.50	100	2.60
Y	Horn's HS 118A .....	86	2.10	100	2.90	39	1.00	100	2.50
Y	Princeton 8-A .....	64	1.80	47	1.00	58	2.00	95	1.80
Y	Horn's HS 654 .....	84	2.15	79	2.20	6	0.20	93	2.80
Y SX	DeKalb XL-65 .....	90	3.05	89	2.80	65	2.00	100	2.40
Y SX	DeKalb XL-45 .....	100	3.40	100	2.90	90	3.10	100	2.30
W	Tenn. 503 .....	50	1.00	31	0.60	30	1.10	94	2.20
<b>Experimentals:</b>									
Y	T3003 .....	16	0.35	38	0.60	22	0.35	50	1.10
W	T5101 (Tenn. 501R) .....	20	0.40	18	0.40	35	0.25	65	1.10
Y	T0044B .....	26	0.50	12	0.30	18	0.50	68	1.40

<sup>1</sup>Planted June 18

**Table 7. Corn: Yields of 30 full-season hybrids tested at four locations in 1965**

Color	Hybrid	State avg.	Fort Pillow <sup>1</sup>	Knoxville <sup>2</sup>	Spring Hill <sup>3</sup>	Jackson <sup>4</sup>
Bushels per Acre						
W	Pioneer 511A	123	117	153	111	110
W	Pioneer 511	119	124	146	101	105
W	Funk G795W-1	113	114	144	110	84
Y	Funk G-732	113	106	147	101	97
W	Funk G-580	112	108	140	106	92
W	Dixie 29R	109	107	138	98	93
W	DeKalb 999	108	100	140	95	97
Y	Pioneer 3048	106	104	137	94	88
Y	Pioneer 309B	106	104	131	102	86
Y	DeKalb 1006	106	94	132	97	100
W	Dixie 29B	105	102	126	98	94
W	Dixie 29 <sup>5</sup>	103	79	138	107	89
W	Taylor 177	103	90	141	96	85
W	Dixie 33	103	68	146	106	91
Y	Funk G-710AA	102	78	136	101	93
Y	McCurdy M-97	101	71	135	106	92
W SX	Sull's 800W	100	96	115	103	87
W	Embro Departure VIII	100	73	125	108	93
W	McCurdy 951W	99	94	121	89	92
Y SX	DeKalb 1055	99	87	120	101	89
Y	Funk G-711AA	99	80	132	94	88
W	DeKalb XL-390	98	84	120	102	84
Y SX	Embro Jarvis E	97	93	110	96	89
Y	Embro 222TA	96	80	122	92	88
W	P.A.G. 653W	95	70	125	94	92
Y	Pioneer 309A <sup>5</sup>	95	83	120	94	83
W SX	Meacham's MX-50W	76	54	87	93	68
<b>Experimentals:</b>						
W	T2108	121	110	160	111	104
W	T3106	116	111	145	114	92
W	T2104	112	105	148	95	96
	L.S.D. (.05)	—	14.2	14.7	12.4	7.1
	C.V. %	—	13.5	9.8	10.9	13.5

<sup>1</sup>Collins silt loam, (2% to 5% slopes).

<sup>2</sup>Sequatchie silt loam, (0% to 5% slopes).

<sup>3</sup>Maury silt loam, (2% to 5% slopes).

<sup>4</sup>Loring silt loam, (2% to 5% slopes).

<sup>5</sup>Also included in test of early-maturing hybrids.

SX—Denotes a single cross or special cross hybrid.

**Table 8. Corn: Characteristics of 30 full-season hybrids  
tested at four locations in 1965**

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	%
W	Pioneer 511A .....	123	78	170	Good	Good	59	18.6
W	Pioneer 511 .....	119	72	170	Good	Good	59	18.0
W	Funk G-795 W-1 .....	113	80	185	Med.-Good	Good	52	17.9
Y	Funk G-732 .....	113	82	150	Good	Good	68	21.2
W	Funk G-580 .....	112	69	170	Good	Good	57	18.6
W	Dixie 29R .....	109	78	150	Med.-Good	Good	63	19.8
W	DeKalb 999 .....	108	76	125	Med.-Good	Med.-Good	54	17.1
Y	Pioneer 3048 .....	106	75	125	Good	Good-Exc.	66	20.9
Y	Pioneer 309B .....	106	67	130	Good	Good	57	19.0
Y	DeKalb 1006 .....	106	76	125	Good	Med.-Good	64	18.4
W	Dixie 29B .....	105	77	150	Med.-Good	Good	61	19.7
W	Dixie 29 <sup>1</sup> .....	103	65	155	Med.-Good	Good	63	19.4
W	Taylor 177 .....	103	71	150	Good	Good	64	19.9
W	Dixie 33 .....	103	72	160	Med.	Med.	67	18.2
Y	Funk G-710AA .....	102	79	140	Good	Good	66	19.8
Y	McCurdy M97 .....	101	72	130	Med.-Good	Med.-Good	57	16.3
W SX	Stull's 800WSX .....	100	72	110	Good-Exc.	Med.-Good	56	18.1
W	Embro Departure VIII .....	100	51	235	Med.	Good-Exc.	66	17.5
W	McCurdy 951W .....	99	52	140	Med.-Good	Good	58	21.0
Y SX	DeKalb 1055 .....	99	79	165	Good-Exc.	Good	64	21.3

Table 8.—(Continued)

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	%
Y	Funk G-711AA .....	99	73	120	Good	Good	59	20.3
W	DeKalb XL-390 .....	98	78	120	Good	Good	56	17.9
Y SX	Embro Jarvis E .....	97	76	115	Good-Exc.	Good-Exc.	49	19.4
27 Y	Embro 222TA .....	96	77	115	Med.-Good	Good	67	20.9
W	P.A.G. 653W .....	95	63	170	Good	Good	56	18.7
Y	Pioneer 309A <sup>1</sup> .....	95	68	110	Med.-Good	Med.	60	18.3
W SX	Meacham's MX50W .....	76	57	135	Med.-Good	Good	52	17.5
<b>Experimentals:<sup>1</sup></b>								
W	T2108 .....	121	64	180	Good	Good	59	17.9
W	T3106 .....	116	58	165	Good	Good	57	18.8
W	T2104 .....	112	64	175	Good	Good	62	19.3

<sup>1</sup>Also included in test of early-maturing hybrids.

**Table 9. Corn: Yields of 17 full-season hybrids tested at four locations for 2 or 3 years**

			Knoxville	Fort Pillow	Jackson	Spring Hill
Color	Variety	Avg.	1964-65	1963-65	1963-65	1963-65
Bushels per Acre						
W	Dixie 29R .....	103	121	94	92	112
W	Funk G-795W-1 ..	103	110	83	84	102
Y	McCurdy M-97 ....	100	122	82	94	112
W	Funk G-580 .....	100	124	92	84	110
W	Dixie 33 .....	100	123	78	91	115
W	Dixie 29B .....	99	111	92	85	116
Y	DeKalb 1006 .....	99	114	93	95	101
W	Dixie 29 <sup>1</sup> .....	98	124	81	84	114
Y	Pioneer 309B .....	97	119	87	88	104
Y	Funk G-710 AA ..	97	124	78	89	107
Y	Pioneer 3048 .....	97	123	85	82	107
W	P.A.G. 653W .....	96	115	76	92	108
Y	Embro 222TA .....	93	112	80	85	103
W	McCurdy 951W ..	92	125	94	87	115
Y	Funk G-711AA ....	92	115	79	83	103
Y	Pioneer 309A <sup>1</sup> ....	89	111	74	80	100
Experimental:						
W	T2108 .....	108	134	98	92	119

<sup>1</sup>Also included in test of early-maturing hybrids.

**Table 10. Corn: Yield and other characteristics of full-season hybrids tested for 2 or 3 years**

Color	Hybrid	3 Yr. avg. 1963- 1965	2 Yr. avg. 1964- 1965	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	Bu./A.	%	No.			In.	%
W	Dixie 29R .....	103	104	80	137	Med.-Good	Good	61	22.6
W	Funk G-795W-1 ..	103	104	81	168	Med.-Good	Good	56	20.8
Y	McCurdy M-97 ....	100	103	85	118	Med.	Med.	59	18.2
W	Funk G-580 .....	100	105	81	143	Good	Good	55	20.2
W	Dixie 33 .....	100	99	81	148	Med.	Good	66	20.9
W	Dixie 29B .....	99	104	78	141	Med.-Good	Good	61	22.0
Y	DeKalb 1006 .....	99	102	87	113	Good	Med.-Good	63	20.3
W	Dixie 29 <sup>1</sup> .....	98	102	81	140	Med.-Good	Good	61	21.4
29 Y	Pioneer 309B .....	97	100	86	120	Good	Good	55	21.5
Y	Funk G-710AA .....	97	100	87	137	Good	Med.-Good	64	23.2
Y	Pioneer 3048 .....	97	99	89	117	Good	Good	63	23.4
W	P.A.G. 653W .....	96	97	79	168	Good-Exc.	Good	58	20.1
Y	Embro 222TA .....	93	95	86	113	Med.-Good	Good	65	22.6
W	McCurdy 951W ..	92	96	76	133	Good	Good-Exc.	59	23.3
Y	Funk G-711AA .....	92	96	83	116	Med.-Good	Med.-Good	60	22.6
Y	Pioneer 309A <sup>1</sup> ....	89	92	85	105	Med.-Good	Med.-Good	58	20.5
W	Pioneer 511 .....	—	112	80	160	Good	Good	55	20.5
W	DeKalb XL390 .....	—	97	82	118	Good-Exc.	Good	54	19.9
Y SX	DeKalb 1055 .....	—	94	82	155	Good	Good	60	24.0
<b>Experimentals:</b>									
W	T2108 .....	108	113	81	158	Med.-Good	Good	60	21.6
W	T3106 .....	—	109	70	155	Good	Good	55	21.0
W	T2104 .....	—	104	72	167	Good	Good	60	22.0

<sup>1</sup>Also included in test of early-maturing hybrids.

SX—Denotes a single cross or special cross hybrid.

**Table 11. Corn: Virus reaction of 30 full-season corn hybrids tested at two locations in 1965**

Color	Hybrid	Knoxville <sup>1</sup>		Fort Pillow	
		Diseased	Severity Index	Diseased	Severity Index
		%		%	
W	Pioneer 511A	0.8	0.01	11.9	0.18
W	Pioneer 511	0.8	0.01	5.0	0.05
W	Funk G795W-1	0.8	0.02	9.9	0.13
Y	Funk G-732	0.8	0.01	16.0	0.30
W	Funk G-580	5.8	0.06	20.8	0.40
W	Dixie 29R	3.3	0.03	12.5	0.28
W	DeKalb 999	2.5	0.02	15.7	0.30
Y	Pioneer 3048	5.0	0.11	26.7	0.45
Y	Pioneer 309B	7.5	0.08	25.8	0.44
Y	DeKalb 1006	0.0	0.0	12.5	0.26
W	Dixie 29B	3.3	0.03	5.8	0.12
W	Dixie 29	0.8	0.01	21.2	0.59
W	Taylor 177	3.3	0.04	16.5	0.40
W	Dixie 33	10.0	0.25	29.4	0.85
Y	Funk G-710AA	2.5	0.05	12.3	0.21
Y	McCurdy M-97	5.8	0.10	23.7	0.50
W SX	Stull's 800W SX	5.0	0.07	18.3	0.41
W	Embro Departure VIII	6.7	0.10	11.9	0.30
W	McCurdy 951W	5.0	0.08	17.6	0.32
Y SX	DeKalb 1055	14.2	0.34	27.7	0.75
Y	Funk G-711AA	5.0	0.15	10.8	0.20
W	DeKalb XL-390	36.7	0.92	63.6	1.91
Y SX	Embro Jarvis E	12.5	0.24	37.8	0.79
Y	Embro 222TA	5.0	0.40	3.3	0.06
W	P.A.G. 653W	15.0	0.26	9.2	0.21
Y	Pioneer 309A	0.8	0.01	26.3	0.58
W	Mecham's MX-50W	67.0	3.00	84.9	3.73
<b>Experimentals:</b>					
W	T2108	0.0	0.0	5.0	0.08
W	T3106	1.7	0.02	22.7	0.47
W	T2104	1.7	0.02	5.8	0.18

<sup>1</sup>Planted June 18.

**Table 12. Corn: Virus reaction of 30 full-season hybrids  
grown at four locations in 1965**

Color	Hybrid	Knoxville (Knox Co.) <sup>1</sup>		Waverly (Humphreys Co.)		Savannah (Hardin Co.)		Memphis (Shelby Co.)	
		Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index
		%		%		%		%	
W	Pioneer 511A .....	16	0.20	21	0.30	17	0.20	74	1.20
W	Pioneer 511 .....	12	0.25	10	0.20	16	0.25	44	0.70
W	Funk G-795 W-1 .....	19	0.30	40	0.50	14	0.15	79	1.70
Y	Funk G-732 .....	9	0.15	33	0.40	17	0.30	57	0.90
W	Funk G-580 .....	24	0.35	16	0.20	7	0.25	18	0.20
W	Dixie 29R .....	8	0.25	31	0.60	32	0.90	95	2.30
W	DeKalb 999 .....	22	0.45	21	0.40	15	0.55	60	1.20
Y	Pioneer 3048 .....	40	0.85	7	0.10	28	0.85	33	0.50
Y	Pioneer 309B .....	19	0.25	32	0.70	9	0.20	93	1.50
Y	DeKalb 1006 .....	16	0.25	36	0.60	35	1.05	76	2.10
W	Dixie 29B .....	26	0.35	33	0.60	27	0.75	94	2.00
W	Dixie 29 .....	14	0.35	30	0.60	32	0.50	83	1.60
W	Taylor 177 .....	18	0.40	63	1.50	30	0.75	83	2.20
W	Dixie 33 .....	58	1.70	41	1.10	65	1.75	75	1.40
Y	Funk G-710AA .....	42	0.80	25	0.30	30	0.70	93	2.40
Y	McCurdy M97 .....	59	1.70	27	0.60	22	0.70	79	1.30
W SX	Stull's 800 WSX .....	75	1.75	6	0.10	26	0.80	93	1.90
W	Embro Departure VIII .....	35	0.85	39	0.90	21	0.60	69	1.40
W	McCurdy 951W .....	29	0.65	22	0.40	41	1.25	71	1.40
Y SX	DeKalb 1055 .....	34	0.80	40	0.60	30	0.70	81	2.10



Table 12.—(Continued)

Color	Hybrid	Knoxville (Knox Co.) <sup>1</sup>		Waverly (Humphreys Co.)		Savannah (Hardin Co.)		Memphis (Shelby Co.)	
		Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index	Diseased	Severity Index
		%		%		%		%	
Y	Funk G-711AA .....	38	1.05	26	0.50	29	0.60	71	1.00
W	DeKalb XL-390 .....	67	2.00	21	0.40	56	2.30	57	1.80
Y SX	Embro Jarvis E .....	36	0.75	19	0.40	30	0.80	80	1.50
Y	Embro 222TA .....	33	0.80	26	0.60	13	0.15	64	1.10
W	P.A.G. 653W .....	26	0.55	18	0.40	23	0.75	83	1.80
W SX	Meacham's MX-50W .....	88	2.60	72	1.90	62	2.35	83	2.50
Y	Dixie 22 .....	64	1.90	29	0.80	30	0.90	72	2.00
W	Dixie 77 .....	2	0.10	22	0.60	26	0.60	92	1.50
<b>Experimentals:</b>									
W	T2108 .....	26	0.50	6	0.10	37	0.95	89	2.00
W	T3106 .....	12	0.15	22	0.40	4	0.15	74	1.50
W	T2104 .....	16	0.20	42	0.90	32	1.00	85	1.60

<sup>1</sup>Planted June 18

## COTTON

The 1965 cotton variety tests were conducted in cooperation with the U. S. Department of Agriculture at Knoxville, and at Jackson, Ames Plantation, and Fort Pillow. Each test consisted of 23 entries in a randomized complete block design with 8 replications. Plots were 2 rows 35 feet long.

Yields of some of the varieties in the Fort Pillow test were probably reduced due to verticillium wilt. For example, Stardel—which is very susceptible to verticillium wilt—gave a lower yield than usual for this location. Stardel led the test in yield at Ames Plantation where verticillium wilt was not observed.

Two 160 boll samples (20 bolls at random from each replication) were taken from each variety before first picking. These samples were used to obtain Gin, Seed, and Fiber data. Yield and other characteristics of the varieties are presented in tables 13 through 21. Bolls per pound is used to indicate the size of the cotton bolls. The higher the number the smaller the bolls, and conversely the lower the number—the larger the bolls. Percent total yield at first picking is used to indicate the earliness of the cotton variety. A high percent of cotton harvested at first picking indicates an early variety and a low percent indicates a late variety. The 2.5% span length, micronaire fineness reading, and fiber strength ( $T_1$ ) are presented in tables 17 through 21. The 2.5% span length is measured on the digital Fibrograph and is closely correlated with upper-half mean length.

The micronaire reading is a relative measure of the fineness of the fiber. Higher readings indicate course fiber and low readings indicate fine fiber.

The fiber strength ( $T_1$ ) is measured on the stelometer. High readings indicate fibers of greater strength and low readings indicate fibers of lesser strength.

Detailed laboratory analysis of the fiber properties of these cottons may be obtained on request from the Department of Agronomy, University of Tennessee.

**Table 13. Cotton: Yield of lint per acre of varieties tested in 1965**

Variety	State <sup>1</sup> avg.	Jackson <sup>2</sup>	Fort Pillow <sup>3</sup>	Ames Plantation <sup>4</sup>	Knoxville <sup>5</sup>
Lint pounds per acre					
Delta Hy-Bee .....	1085	1104	1156	994	1030
Dixie King II .....	1078	1115	1079	1040	1069
Deltapine Smooth Leaf .....	1070	977	1162	1068	1093
Stoneville 213 .....	1064	1064	1089	1039	1039
Carolina Queen .....	1055	1128	1042	996	1108
Deltapine 7139 .....	1054	942	1285	935	1119
Pennington Hy-Bee .....	1043	1058	1108	961	1048
Stardel .....	1042	1074	951	1101	1052
Auburn 56 .....	1032	1058	1088	950	1067
McNair 1032 .....	1030	1009	1102	979	996
Stoneville 7A .....	1027	1092	999	992	1048
Auburn M .....	1018	1122	961	969	1053
Coker 100A (WR) .....	1015	1016	1027	1003	1163
DeKalb 128 .....	1009	1019	980	1027	1049
Empire W.R. 61 .....	1001	1061	1057	885	1063
Rex Smoothleaf .....	994	1052	1040	890	1048
DeKalb 108 .....	943	1041	933	854	1030
<b>Experimentals:</b>					
T-59-134 .....	1157	1183	1298	991	1215
B-57-478 .....	1044	964	1196	972	1093
T-56-210 .....	989	1105	990	872	1105
T-58-169 .....	943	1078	949	803	1004
Emp. Der. K-10 .....	905	1071	848	795	1002
AHA Der. K-9 .....	846	878	940	719	769
L.S.D. (.05) .....	—	117.4	159.2	175.3	78.9
C.V. % .....	—	11.4	15.4	18.8	7.1

<sup>1</sup>Knoxville data not included in state average.

<sup>2</sup>Memphis and Grenada silt loam, (0% to 2% slopes).

<sup>3</sup>Morganfield and Adler silt loam, (0% to 2% slopes).

<sup>4</sup>Loring silt loam, (2% to 5% slopes).

<sup>5</sup>Cumberland clay loam eroded, (5% to 8% slopes).

**Table 14. Cotton: Characteristics of 23 cotton varieties tested at three locations in 1965<sup>1</sup>**

Variety	avg. State yield	Percent lint	Bolls per lb.	Percent total yield at 1st picking
	Lint lb./A.	%	No.	%
Delta Hy-Bee .....	1085	37.5	70	86
Dixie King II .....	1078	37.9	61	87
Deltapine Smooth Leaf .....	1070	38.7	76	81
Stoneville 213 .....	1064	38.7	74	88
Carolina Queen .....	1055	38.5	72	83
Deltapine 7139 .....	1054	39.0	74	87
Pennington Hy-Bee .....	1043	37.7	68	86
Stardel .....	1042	38.0	77	88
Auburn 56 .....	1032	35.9	72	88
McNair 1032 .....	1030	37.8	73	80
Stoneville 7A .....	1027	38.3	74	84
Auburn M .....	1018	36.5	67	92
Coker 100A (WR) .....	1015	37.2	71	83
DeKalb 128 .....	1009	36.9	68	85
Empire W.R. 61 .....	1001	36.0	58	87
Rex Smoothleaf .....	994	36.8	66	88
DeKalb 108 .....	943	36.4	68	35
<b>Experimentals:</b>				
T-59-134 .....	1157	39.5	67	92
B-57-478 .....	1044	36.4	70	90
T-56-210 .....	989	37.0	66	90
T-58-169 .....	943	37.3	68	91
Emp. Der. K-10 .....	905	36.0	64	88
AHA Der. K-9 .....	846	35.1	68	88

<sup>1</sup>Knoxville data not included in this table.

**Table 15. Cotton: Average yield for varieties tested for 3 years 1963-65<sup>1</sup>**

Variety	3 Yr. avg. 1963-65	Ames			
		Jackson	Fort	Pillow	Plantation Knoxville
Lint pounds per acre					
Auburn M .....	1030	1115	1002	974	970
Stardel .....	1012	1082	971	982	973
Dixie King II <sup>2</sup> .....	1008	1079	1065	879	950
Stoneville 213 .....	997	1078	1013	899	945
Auburn 56 .....	990	1042	1088	903	942
Carolina Queen .....	968	1061	991	968	981
Stoneville 7A .....	959	1082	916	879	912
Coker 100A (WR) .....	955	1036	965	863	975
Rex Smoothleaf .....	940	1052	957	812	933
Deltapine Smooth Leaf .....	934	942	964	896	904
DeKalb 108 .....	926	1003	929	847	957
Empire W.R. 61 .....	920	988	975	798	937
Experimentals:					
T-59-134 .....	1125	1146	1250	979	1117
T-56-210 .....	1012	1102	1015	919	1008
B-57-478 .....	971	986	1039	887	956
Emp. Der. K-10 <sup>3</sup> .....	944	1045	946	841	932
AHA Der. K-94 .....	842	875	918	731	813

<sup>1</sup>Knoxville data not included in average.

<sup>2</sup>Tested in 1963 as Dixie King.

<sup>3</sup>Tested in 1963 as K-8 and as K-9 in 1964.

\*Tested in 1963 as K-7 and as K-8 in 1964.

**Table 16. Cotton: Yield and other characteristics of varieties tested for 3 years 1963-65<sup>1</sup>**

Variety	Average	Percent lint	Bolls per lb.	Percent total yield at 1st picking
	Lint lb./A.	%	No.	%
Auburn M	1030	36.4	66	75
Stardel	1012	38.1	77	76
Dixie King II <sup>2</sup>	1008	37.1	59	72
Stoneville 213	997	38.1	74	71
Auburn 56	990	35.8	70	72
Carolina Queen	968	37.8	70	72
Stoneville 7A	959	37.9	73	66
Coker 100A (WR)	955	36.9	71	67
Rex Smoothleaf	940	36.1	64	77
Deltapine Smooth Leaf	934	38.2	77	68
DeKalb 108	926	36.0	66	70
Empire W.R. 61	920	35.4	57	73
<b>Experimentals:</b>				
T-59-134	1125	39.4	64	82
T-56-210	1012	36.9	66	80
B-57-478	971	36.0	68	75
Emp. Der. K-10 <sup>3</sup>	944	35.6	62	80
AHA Der. K-94	842	34.6	67	76

<sup>1</sup>Knoxville data not included in average.

<sup>2</sup>Tested in 1963 as Dixie King.

<sup>3</sup>Tested in 1963 as K-8 and as K-9 in 1964.

<sup>4</sup>Tested in 1963 as K-7 and as K-8 in 1964.

**Table 17. Cotton: Fiber Length (2.5% Span Length)  
of varieties tested in 1964**

Variety	Average <sup>1</sup>	Jackson 1964	Fort. Pillow 1964	Ames Plantation 1964	Knoxville 1964
Coker 100A (WR) .....	1.14	1.11	1.14	1.16	1.09
DeKalb 220 .....	1.11	1.08	1.15	1.11	1.12
Carolina Queen .....	1.11	1.08	1.14	1.12	1.08
Empire W.R. 61 .....	1.10	1.08	1.12	1.08	1.07
Deltapine Smooth Leaf .....	1.10	1.08	1.11	1.10	1.09
Cobal .....	1.10	1.12	1.09	1.11	1.10
DeKalb 108 .....	1.09	1.06	1.10	1.10	1.09
Rex Smoothleaf .....	1.09	1.08	1.10	1.10	1.08
Deltapine 45 .....	1.09	1.08	1.11	1.10	1.08
Dixie King II .....	1.08	1.06	1.09	1.08	1.05
Stardel .....	1.08	1.06	1.08	1.12	1.07
Stoneville 7A .....	1.08	1.06	1.12	1.06	1.08
Auburn 56 .....	1.07	1.02	1.10	1.08	1.06
Stoneville 213 .....	1.07	1.06	1.09	1.07	1.07
Auburn M .....	1.07	1.06	1.09	1.06	1.08
<b>Experimentals:</b>					
Emp. Der. K9 .....	1.08	1.06	1.10	1.08	1.08
AHA Der. K8 .....	1.08	1.04	1.11	1.08	1.05
T-58-169 .....	1.08	1.06	1.10	1.06	1.06
T-56-210 .....	1.07	1.04	1.08	1.09	1.07
T-59-134 .....	1.07	1.05	1.07	1.10	1.04
B-57-478 .....	1.02	0.98	1.04	1.05	1.03

<sup>1</sup>Knoxville data not included in average.

**Table 18. Cotton: Fiber fineness of varieties tested in 1964  
(Micronaire Reading)**

Variety	Average <sup>1</sup>	Jackson 1964	Fort Pillow 1964	Ames Plantation 1964	Knoxville 1964
Stoneville 213	4.47	4.76	4.54	4.11	4.54
Deltapine 45	4.34	4.64	4.48	3.90	4.16
Stardel	4.33	4.51	4.48	4.00	4.38
Dixie King II	4.32	4.40	4.45	4.12	4.28
Stoneville 7A	4.29	4.66	4.28	3.94	4.48
Deltapine Smooth Leaf	4.19	4.51	4.32	3.74	4.28
Auburn 56	4.18	4.48	4.34	3.72	4.21
Carolina Queen	4.17	4.42	4.32	3.77	4.62
Auburn M	4.15	4.40	4.25	3.81	4.34
Coker 100A (W.R.)	4.13	4.45	4.25	3.71	4.48
DeKalb 108	4.03	4.30	4.12	3.66	4.36
Cobal	4.00	4.16	4.10	3.74	4.15
DeKalb 220	3.97	4.30	4.10	3.52	4.32
Rex Smoothleaf	3.91	4.22	3.86	3.64	3.95
Empire W.R. 61	3.71	3.96	3.80	3.38	4.06
<b>Experimentals:</b>					
AHA Der. K8	4.46	4.70	4.56	4.11	4.66
T-56-210	4.25	4.41	4.68	3.64	4.31
B-57-478	4.19	4.48	4.28	3.82	4.11
T-59-134	4.11	4.26	4.14	3.94	4.32
T-58-169	4.06	4.26	4.10	3.81	4.28
Emp. Der. K9	3.91	4.17	3.90	3.65	4.22

<sup>1</sup>Knoxville data not included in average.



**Table 19. Cotton: Fiber fineness of varieties tested from 1962-64  
(Micronaire Reading)**

Variety	Average <sup>1</sup>	Jackson 1962-64	Fort. Pillow 1962-64	Ames Plantation 1963-64	Knoxville 1962-64
Stoneville 213 .....	4.70	4.71	4.72	4.66	4.49
Stoneville 7A .....	4.60	4.67	4.62	4.47	4.52
Deltapine Smooth Leaf ...	4.48	4.54	4.55	4.27	4.16
Carolina Queen .....	4.44	4.48	4.50	4.28	4.38
Stardel .....	4.42	4.29	4.55	4.41	4.27
Dixie King II <sup>2</sup> .....	4.36	4.35	4.42	4.28	4.17
Coker 100A (W.R.) .....	4.32	4.30	4.38	4.25	4.31
Auburn 56 .....	4.30	4.35	4.35	4.17	4.11
Auburn M .....	4.29	4.26	4.38	4.21	4.05
DeKalb 108 .....	4.21	4.23	4.27	4.08	4.17
DeKalb 220 .....	4.20	4.21	4.23	4.12	4.12
Cobal .....	4.11	4.07	4.15	4.12	3.95
Rex Smoothleaf <sup>3</sup> .....	4.05	4.05	4.01	4.11	3.84
Empire W.R. 61 .....	3.94	4.05	3.98	3.70	3.91
<b>Experimental:</b>					
T-56-210 .....	4.24	4.31	4.27	4.09	4.16

<sup>1</sup>Does not include the Knoxville data, but is an average of the fiber fineness of individual years at the 3 locations in West Tennessee.

<sup>2</sup>Tested in 1962 and 1963 as Dixie King.

<sup>3</sup>Tested in 1962 as Rex.

**Table 20. Cotton: Fiber Strength, T<sub>1</sub>, as measured on the Stelometer of varieties tested in 1964**

Variety	Average <sup>1</sup>	Jackson 1964	Fort Pillow 1964	Ames Plantation 1964	Knoxville 1964
Deltapine 45 .....	1.94	1.98	1.92	1.92	1.76
Stardel .....	1.92	2.01	1.85	1.91	1.78
Deltapine Smooth Leaf ....	1.89	1.98	1.84	1.86	1.72
Cobal .....	1.82	1.92	1.77	1.78	1.66
Carolina Queen .....	1.80	1.86	1.77	1.78	1.67
DeKalb 108 .....	1.78	1.85	1.76	1.75	1.63
Empire W.R. 61 .....	1.78	1.82	1.80	1.72	1.68
Coker 100A (W.R.) .....	1.77	1.82	1.74	1.76	1.66
Stoneville 213 .....	1.76	1.82	1.71	1.76	1.74
DeKalb 220 .....	1.75	1.70	1.77	1.79	1.74
Dixie King II .....	1.74	1.72	1.76	1.74	1.67
Auburn 56 .....	1.72	1.78	1.68	1.69	1.64
Auburn M .....	1.72	1.70	1.81	1.64	1.64
Rex Smoothleaf .....	1.72	1.67	1.82	1.66	1.72
Stoneville 7A .....	1.64	1.65	1.62	1.64	1.66
<b>Experimentals:</b>					
AHA Der. K8 .....	2.03	2.11	2.10	1.88	1.88
B-57-478 .....	1.83	1.84	1.80	1.86	1.80
Emp. Der. K9 .....	1.81	1.80	1.82	1.80	1.74
T-59-134 .....	1.80	1.90	1.82	1.68	1.68
T-56-210 .....	1.80	1.84	1.72	1.82	1.70
T-58-169 .....	1.78	1.79	1.84	1.72	1.72

<sup>1</sup>Knoxville data not included in average.

**Table 21. Cotton: Fiber Strength,  $T_1$ , as measured on the Stelometer of varieties tested from 1962-64**

Variety	Average <sup>1</sup>	Jackson 1962-64	Fort Pillow 1962-64	Ames Plantation 1963-64	Knoxville 1962-64
Stardel .....	1.91	1.88	1.87	2.00	1.67
Deltapine Smooth Leaf ..	1.91	1.96	1.88	1.88	1.61
Cobal .....	1.86	1.87	1.84	1.88	1.58
Carolina Queen .....	1.82	1.81	1.81	1.84	1.58
Coker 100A (W.R.) .....	1.82	1.85	1.80	1.80	1.57
Stoneville 213 .....	1.80	1.82	1.77	1.81	1.58
Empire W. R. 61 .....	1.80	1.77	1.81	1.84	1.57
Auburn 56 .....	1.79	1.81	1.77	1.78	1.58
DeKalb 220 .....	1.78	1.73	1.80	1.82	1.61
Auburn M .....	1.76	1.74	1.81	1.71	1.57
DeKalb 108 .....	1.76	1.79	1.73	1.77	1.57
Dixie King II <sup>2</sup> .....	1.75	1.72	1.77	1.78	1.58
Stoneville 7A .....	1.72	1.71	1.74	1.71	1.56
Rex Smoothleaf <sup>3</sup> .....	1.71	1.64	1.75	1.74	1.53
<b>Experimental:</b>					
T-56-210 .....	1.81	1.78	1.80	1.87	1.58

<sup>1</sup>Does not include the Knoxville data, but is an average of the fiber strength of individual years at the 3 locations in West Tennessee.

<sup>2</sup>Tested in 1962 and 1963 as Dixie King

<sup>3</sup>Tested in 1962 as Rex.

## FALL-SEEDED SMALL GRAIN

Yields of small-grains in 1965 were generally lower than usual across the state where these tests were conducted. The reduction in yields was in part due to winter injury and disease. Several oat varieties received winter injury at Crossville, Spring Hill, Jackson, Knoxville and Springfield. These data are presented in Table 23.

Forkeddeer is usually very winter hardy but in 1964-65 it received severe winter injury at Crossville and Spring Hill. Coker 62-42 and Carolee winter killed at Crossville, Spring Hill and Jackson.

The oat variety test at Crossville suffered some from winter injury and was severely damaged by barley yellow dwarf. No oat data are reported for this location in 1965. Yields of oats and barley were reduced by barley yellow dwarf at several locations. Barley yellow dwarf ratings are given in Table 33. A summary of other disease injury to small grains is presented in Tables 34 and 35. Yield and other data in Table 28 were furnished by C. O. Qualset from the wheat advanced strains tests. These results, based on tests in 1 year, indicate that Gaines is not suitable for production in Tennessee. Future tests should check this conclusion.



Figure 1. Oat Variety Test, Jackson, March 23, 1965. Note winterkill of Carolee on the left as compared with Forkeddeer on the right.

Table 22. Fall-seeded oats: Yield summary of varieties tested in 1965

Variety	Average	Knox-ville <sup>1</sup>	Greene-ville <sup>2</sup>	Spring Hill <sup>3</sup>	Spring-field <sup>4</sup>	Jackson <sup>5</sup>
Bushels per acre						
Blount	64	34	70	26	115	72
Norline	44	7	40	28	86	61
Forkeddeer	40	16	60	0	71	51
Dubois	32	18	28	5	71	36
Carolee	31	42	69	0	46	0
Coker 62-42	14	13	21	0	35	0
<b>Experimentals:</b>						
Tenn. 61-231	72	46	60	44	120	88
Tenn. 60-32	70	51	67	32	122	80
Tenn. 59-19	52	32	53	15	98	64
Tenn. 61-229	47	27	55	5	99	48
L.S.D. (.05)	—	9.0	15.6	6.4	15.2	11.2
C.V. %	—	21.6	20.6	19.6	12.1	12.2

<sup>1</sup>Etowah silt loam, (2% to 5% slopes).

<sup>2</sup>Waynesboro loam, (2% to 5% slopes) and Cumberland silt loam,

<sup>3</sup>Maury silt loam, eroded (2% to 5% slopes).

<sup>4</sup>Dickson silt loam, eroded (2% to 5% slopes).

<sup>5</sup>Grenada silt loam and Loring silt loam, (2% to 5% slopes).

**Table 23. Winter survival of ten oat varieties at five<sup>1</sup> locations in 1964-65**

Variety	Average	Knox-ville	Cross-ville	Spring-field	Spring Hill	Jackson
Percent stand survival						
Coker 62-42 .....	21	72	1	32	0	0
Norline .....	97	98	92	95	100	100
Forkeddeer .....	58	92	20	70	12	95
Blount .....	92	98	82	90	91	100
Dubois .....	90	95	84	92	78	100
Carolee .....	28	85	1	54	0	0
Tenn. 60-32 .....	87	90	78	90	81	95
Tenn. 61-229 .....	76	92	61	85	49	95
Tenn. 61-231 .....	93	92	88	91	96	100
Tenn. 59-19 .....	87	95	66	88	88	100

<sup>1</sup>No winter injury of oats was observed at the Greenville location.

**Table 24. Fall-seeded oats: Yield summary of varieties tested at five locations for 2 or 3 years**

Variety	Average	Knoxville 1963-65	Crossville 1963-65	Spring Hill 1963-65	Springfield 1963-65	Jackson 1964-65
Bushels per acre						
Blount .....	81	51	115	69	109	70
Forkeddeer .....	64	31	100	57	87	52
<b>Experimentals:</b>						
Tenn. 60-32 .....	88	51	126	75	113	85
Tenn. 59-19 .....	68	37	92	50	99	73

**Table 25. Oat: Characteristics of varieties in 1965**

Variety	Standing ability	Relative maturity	Plant height 1965	Test weight 1965
			In.	Lb./bu.
Blount .....	Good	Late	40	36
Norline .....	Fair	Late	40	34
Forkeddeer .....	Poor	Med.	44	35
Dubois .....	Fair	Med.	37	36
Carolee .....	Fair	Med.	35	32
Coker 62-42 .....	Good	Early	34	33
<b>Experimentals:</b>				
Tenn. 61-231 .....	Fair	Med.	39	34
Tenn. 60-32 .....	Fair	Med.-Late	38	34
Tenn. 59-19 .....	Fair	Early	39	34
Tenn. 61-229 .....	Good	V. Late	40	35

**Table 26. Wheat: Yield summary of varieties tested in 1965**

Variety	Average	Knox-ville <sup>1</sup>	Greene-ville <sup>2</sup>	Cross-ville <sup>3</sup>	Spring Hill <sup>4</sup>	Spring-field <sup>5</sup>	Jack-son <sup>6</sup>	Martin <sup>7</sup>
<b>Bushels per acre</b>								
Monon	40	21	46	52	27	46	46	38
Knox 62	36	23	38	44	22	44	46	34
Stadler	36	24	41	46	24	40	44	30
Knox	35	23	43	43	24	43	42	29
Reed	35	29	40	48	26	42	30	33
Lewis	34	19	44	38	25	44	44	27
Seneca	33	26	34	46	27	45	28	26
Hadden	16	19	27	0	0	18	33	16
<b>Experimental:</b>								
Tenn. 60-23	39	27	45	50	26	52	43	31
L.S.D. (.05)	—	3.1	3.9	6.3	N.S.	5.2	4.9	5.6
C.V. %	—	9.2	6.7	9.3	12.0	8.7	8.4	13.2

<sup>1</sup>Etowah silt loam, (2% to 5% slopes).

<sup>4</sup>Maury silt loam, eroded (2% to 5% slopes).

<sup>2</sup>Waynesboro loam, (2% to 5% slopes), and  
Cumberland silt loam, (2% to 5% slopes).

<sup>5</sup>Dickson silt loam, eroded (2% to 5% slopes).

<sup>6</sup>Grenada silt loam (0% to 2% slopes).

<sup>3</sup>Hartsells loam, eroded (2% to 5% slopes).

<sup>7</sup>Grenada silt loam, (2% to 5% slopes).

**Table 27. Wheat: Yield summary of varieties tested at six locations for 3 years, 1963-65**

Variety	Average	Knoxville	Greeneville	Crossville	Spring Hill	Spring-field	Jackson
Monon	46	33	56	58	39	46	44
Reed	44	37	53	55	39	42	36
Knox	42	33	54	45	37	44	42
Knox 62	42	32	47	50	36	46	42
Seneca	41	34	43	55	37	47	33
<b>Experimental:</b>							
Tenn. 60-23	47	34	54	61	41	52	40

**Table 28. Wheat: Yield summary and characteristics of five wheat varieties grown at four locations in 1965**

Variety	Average	Knox-ville	Spring-field	Spring Hill	Jack-son	Test weight average	Height average	Lodging average	Heading average
<b>Bushels per acre</b>					<b>Lb./bu.</b>	<b>In.</b>	<b>%</b>	<b>Date</b>	
Knox 62	29	18	36	27	37	55.7	42	52	April 28
Monon	32	19	40	30	39	55.2	40	40	April 28
Seneca	31	17	42	30	33	54.7	45	22	May 9
Redcoat	33	28	35	32	38	55.9	43	3	May 8
Gaines	23	18	27	14	32	50.8	27	5	May 12
L.S.D. (.05)	3.7	3.1	8.9	5.3	5.2	—			

**Table 29. Wheat: Characteristics of varieties in 1965**

Variety	Standing ability	Relative maturity	Plant height	Test weight
			In.	Lb./bu.
Monon .....	Fair	V. Early	44	56
Knox .....	Poor	V. Early	46	56
Stadler .....	Fair	Medium	46	57
Knox 62 .....	Poor	V. Early	46	57
Reed .....	V. Good	Late	46	57
Lewis .....	Fair	Early	42	55
Seneca .....	Good	Late	50	55
Hadden .....	Good	Med.-Late	42	56
<b>Experimental:</b>				
Tenn. 60-23 .....	Good	Late	48	57

**Table 30. Barley: Yield summary of varieties tested in 1965**

Variety	Average	Knox-ville <sup>1</sup>	Greene-ville <sup>2</sup>	Cross-ville <sup>3</sup>	Spring Hill <sup>4</sup>	Spring-field <sup>5</sup>	Jack-son <sup>6</sup>
Bushels per acre							
Harrison .....	47	48	65	44	32	46	45
Decatur .....	46	40	51	55	29	50	53
Wade .....	45	44	52	43	26	58	49
Will .....	45	41	44	56	21	57	50
Colonial 2 .....	44	39	47	35	31	58	51
Kenbar .....	41	39	35	47	16	56	53
Rogers .....	40	36	35	47	25	56	43
Pennrad .....	38	39	45	30	20	48	46
Hudson .....	37	40	39	28	13	56	44
Dayton .....	35	39	33	28	10	52	46
<b>Experimentals:</b>							
Tenn. 61-119 .....	46	46	33	44	36	64	55
Tenn. 61-116 .....	41	48	35	35	31	50	45
Tenn. 59-15 .....	39	48	33	37	15	55	45
L.S.D. (.05) .....	—	5.1	8.0	16.1	5.6	7.0	5.5
	—	8.4	13.2	27.6	16.6	9.0	8.0

<sup>1</sup>Etowah silt loam, (2% to 5% slopes).

<sup>2</sup>Waynesboro loam, (2% to 5% slopes), and

Cumberland silt loam, (2% to 5% slopes).

<sup>3</sup>Hartsells loam, eroded (2% to 5% slopes).

<sup>4</sup>Maury silt loam, eroded (2% to 5% slopes).

<sup>5</sup>Dickson silt loam, eroded (2% to 5% slopes).

<sup>6</sup>Memphis silt loam and Grenada silt loam, (0% to 2% slopes).

**Table 31. Barley: Yield summary of varieties tested at six locations for 3 years, 1963-65**

Variety	Average	Knoxville	Greeneville	Crossville	Spring Hill	Spring-field	Jackson
Bushels per acre							
Hudson	57	47	60	67	49	70	46
Dayton	55	45	51	62	49	70	50
Kenbar	49	42	45	53	45	68	40
<b>Experimental:</b>							
Tenn. 59-15	58	47	50	64	62	71	54

**Table 32. Barley: Characteristics of varieties in 1965**

Variety	Standing ability	Relative maturity	Plant height	Test weight
			In.	Lb./bu.
Harrison	Good	Late	38	46
Decatur	Good	Med.	37	45
Wade	Fair	Late	34	44
Will	Fair	Late	40	43
Colonial 2	Fair	Late	36	41
Kenbar	Fair	Early	35	41
Rogers	Poor	Late	39	44
Pennrad	Fair	Med.-Late	39	42
Hudson	Fair	Late	39	46
Dayton	Good	Early	36	41
<b>Experimentals:</b>				
Tenn. 61-119	Good	Late	41	42
Tenn. 61-116	Fair	Late	40	41
Tenn. 59-15	Good	Early	37	42



**Table 33. Susceptibility of oat varieties to diseases<sup>1</sup> under natural field conditions at five locations, 1965**

Variety	Knox-ville	Cross-ville	Spring Hill	Greene-ville	Jack-son
Oats	Barley	Yellow Dwarf	Virus	Disease <sup>2</sup>	Crown Rust
Coker 62-42	7.0	—	— <sup>3</sup>	8.5	—
Norline	4.0	5.8	4.2	5.8	3
Forkeddeer	3.5	4.5	—	5.5	2
Blount	1.8	4.0	4.0	5.8	1
Dubois	3.8	8.2	8.0	9.0	3
Carolee	2.2	—	—	6.0	—
Tenn. 60-32	1.5	5.2	6.0	4.0	2
Tenn. 61-229	4.5	7.5	5.3	5.3	2
Tenn. 61-231	3.0	5.2	5.0	4.8	2
Tenn. 59-19	4.5	5.8	5.5	7.5	T

<sup>1</sup>The oat varieties were rated for crown rust in the same manner as the wheat varieties.

<sup>2</sup>The oat varieties were rated for barley yellow dwarf virus disease in the same manner as the barley varieties. A scale of 1 to 10 was used (1 being slight and 10 being very severe injury).

<sup>3</sup>No ratings were taken where plots had a poor stand due to winter-kill.

**Table 34. Susceptibility of wheat varieties to disease<sup>1</sup> under natural field conditions at five locations, 1965**

Variety	Knox-ville	Cross-ville	Spring-field	Spring Hill	Jack-son	Jack-son
Wheat			Leaf Rust			Stem Rust
Knox	T	0	0	1	2	3
Seneca	5	0	0	3	2	2
Hadden	T	0	0	0	0	T
Monon	1	0	0	3	2	1
Knox 62	T	0	0	1	1	3
Reed	0	0	0	0	T	2
Tenn. 60-23	1	0	0	T	0	T
Stadler	1	0	0	T	T	1
Lewis	1	0	0	3	2	3
			Powdery Mildew			
Knox	1	1	T	1	0	
Seneca	2	2	3	3	0	
Hadden	0	—	0	0	0	
Monon	2	1	3	4	0	
Knox 62	T	T	T	T	0	
Reed	3	1	4	2	T	
Tenn. 60-23	1	0	1	T	0	
Stadler	4	2	4	4	2	
Lewis	4	3	5	4	3	
Triumph	—	—	2	—	—	

<sup>1</sup>Leaf rust ratings on wheat were based on Cobb's modified scale ranging from 0, in which no disease symptoms were apparent, to 6 in which the leaf surface was entirely covered with rust. All other diseases were rated on a scale of 0 to 6. The letter "T" (Trace) was used to indicate that a few localized spots of a disease occurred, or that the percentage of the leaf surface affected was less than 1%.

**Table 35. Susceptibility of barley varieties to disease<sup>1</sup> under natural field conditions at five locations<sup>2</sup>, 1965**

Variety	Knox- ville	Cross- ville	Spring- field	Spring Hill	Jack- son
<b>Barley</b>			<b>Powdery</b>	<b>Mildew</b>	
Rogers	0	—	0	0	—
Will	T	—	0	0	—
Kenbar	T	—	T	0	—
Dayton	1	—	3	0	—
Harrison	0	—	0	0	—
Decatur	4	—	4	1	—
Colonial 2	2	—	0	0	—
Wade	3	—	T	0	—
Hudson	T	—	T	0	—
Pennrad	T	—	0	0	—
Tenn. 59-15	0	—	0	0	—
Tenn. 61-116	2	—	3	1	—
Tenn. 61-119	0	—	0	0	—

	<b>Barley Yellow Dwarf Virus Disease</b>				
Rogers	—	5.0	1.0	5.8	0.2
Will	—	3.5	0.8	0.0	0.0
Kenbar	—	4.5	0.5	5.0	0.5
Dayton	—	7.5	1.8	7.2	1.8
Harrison	—	6.8	2.8	4.8	2.5
Decatur	—	7.2	2.0	1.8	1.0
Colonial 2	—	6.8	0.5	2.5	0.2
Wade	—	7.0	1.0	5.0	1.2
Hudson	—	9.2	1.8	7.8	1.2
Pennrad	—	7.2	2.0	7.8	1.0
Tenn. 59-15	—	7.2	1.2	4.8	1.2
Tenn. 61-116	—	6.5	1.0	2.0	0.2
Tenn. 61-119	—	8.0	2.0	8.0	0.5

<sup>1</sup>The barley varieties were rated for mildew in the same manner as the wheat varieties. Barley Yellow Dwarf virus disease ratings were based on a scale of 1 to 10 (1 being slight and 10 being very severe).

<sup>2</sup>No disease ratings are given for the Greeneville locations because some of the barley varieties were too mature to rate at the time the notes were taken.

## ALFALFA AND RED CLOVER

**A**lfalfa results reported here are from tests seeded in 1960, 1961, 1962, and 1964.

Two tests are being conducted at Spring Hill. One was seeded in 1962 and the other in 1964. Results for both tests are reported. At the end of the fifth production year—in 1965 at Springfield—Williamsburg, Lahontan, Zia, and Vernal were performing best. At other locations in the state, Lahontan and Zia have performed poorly. Some new varieties in the test that show promise are Cody, Culver, Cherokee, and Vernal.

The results reported for Red clover are from tests seeded in 1963 and 1964, and a test at Crossville seeded in the spring of 1965. These data indicate that Ky. Syn. A2 (an experimental) performs well under Tennessee conditions. Ky. Syn. A2 is slow to become established, seems to lack seedling vigor, but once it has become established it persists longer than the other varieties tested. Of the commercial varieties, Kenland has out-performed the other varieties in the tests.



Figure 2. Left, Pennscott red clover; right, Ky. Syn. A2. Red Clover Variety Test at Jackson, March 23, 1965. The test was seeded in the fall of 1963.

**Table 36. Alfalfa: Yield summary of tests seeded in 1964**

Variety	Knoxville <sup>1</sup> 1965	Spring Hill <sup>2</sup> 1965	Variety	Spring Hill <sup>2</sup> 1965 Continued
Tons of air-dry hay per acre		Tons of air-dry hay per acre		
Atlantic	2.06	4.16	WL 303	3.67
Vernal	2.00	3.98	N.Y. 64-4 Creeper	3.46
Culver	1.81	3.88	Norseman	3.64
Cherokee	2.30	3.38	Warrior	3.40
Cardinal	1.96	3.57	Pioneer 525	3.34
Progress	2.08	3.43	Haymor	3.13
DuPuits	2.18	3.35	Ky. 21 Syn. Creeper	3.06
Buffalo	2.22	3.26	Rhizoma	3.02
Williamsburg	2.22	3.24	Stride	2.99
WL 302	2.06	3.31	Glacier	2.89
Cayuga	2.17	3.14	WL 304	2.86
Saranac	2.28	3.20	Rambler	2.78
P.A.G. FD-100	1.88	3.38	Ranger	2.66
Alfa	1.98	3.25	Tuna	2.61
Pioneer 522	2.09	3.10	Resistador	2.50
Pioneer 583	2.00	3.10	A.S. 49	2.42
Cody	1.82	2.69	A.S. 13	0.34
Narragansett	2.04	2.21	Sonora	0.00
Delta	2.11	—		—
N.C. Syn. G57 (2)	2.33	—		—
N.C. Syn. G57 (3)	2.04	—		—
N.C. Syn. F56 (1)	2.01	—		—
L.S.D. (.05)	N.S.	—		1.13
C.V. %	12.0	—		26.4

<sup>1</sup>Etowah silt loam, (2% to 5% slopes).

<sup>2</sup>Maury silt loam, (2% to 5% slopes).

**Table 37. Alfalfa: Yield summary of tests seeded in 1962**

Variety	Avg.	Jackson <sup>1</sup>			Spring Hill <sup>2</sup>			Crossville <sup>3</sup>		
		1963	1964	1965	1963	1964	1965	1963	1964	1965
Tons of air-dry hay per acre										
Williamsburg	4.57	4.06	4.74	4.84	5.60	5.02	5.02	2.24	5.32	4.26
Cody	4.44	3.86	4.65	4.50	5.06	5.02	4.58	2.20	5.88	4.22
Buffalo	4.37	4.16	4.57	4.74	5.15	4.91	4.54	2.07	5.22	3.96
Vernal	4.36	3.93	4.59	4.72	4.77	4.70	4.49	2.04	5.71	4.30
Atlantic	4.26	3.62	4.22	4.62	5.52	4.99	4.88	1.87	5.02	3.60
Culver	4.21	3.63	4.44	4.37	5.11	4.74	4.53	1.93	5.24	3.91
Narragansett	4.14	3.73	4.24	4.43	5.58	4.42	4.43	2.12	4.68	3.68
Orchies	3.98	3.80	3.83	4.13	4.98	3.90	4.18	2.36	5.00	3.61
P.A.G. FD-100	3.94	3.75	3.54	3.70	5.68	4.58	4.38	2.17	4.64	3.00
DuPuits	3.80	3.78	3.84	4.11	5.42	4.02	4.06	2.08	4.22	2.72
Cherokee	—	3.78	4.59	4.78	—	—	—	—	—	—
Europa	—	—	—	—	5.77	4.99	4.70	2.26	5.18	3.81
L.S.D. (.05)	—	N.S.	0.44	0.50	0.59	0.72	N.S.	N.S.	0.64	0.55
C.V. %	—	6.5	7.2	7.9	7.6	10.7	9.5	10.6	8.8	10.4

<sup>1</sup>Loring silt loam, (0% to 2% slopes).

<sup>2</sup>Maury silt loam, (2% to 5% slopes).

<sup>3</sup>Hartsells loam, (2% to 5% slopes).

**Table 38. Alfalfa: Yield summary of test seeded in 1961**

Variety	Avg.	Greeneville <sup>1</sup>			
		1962	1963	1964	1965
Tons of air-dry hay per acre					
Williamsburg .....	4.51	3.05	5.95	4.00	5.03
Culver .....	4.50	2.98	5.88	4.00	5.12
Buffalo .....	4.45	3.07	5.97	3.90	4.85
Narragansett .....	4.42	2.80	5.95	3.97	4.94
Socheville .....	4.26	2.62	5.94	3.95	4.52
P.A.G. FD-100 .....	4.23	2.67	6.00	3.88	4.38
DuPuits .....	4.22	2.68	5.92	3.95	4.32
Orchies .....	4.02	2.78	5.82	3.47	4.01
Maliani .....	3.88	2.57	5.25	3.45	4.24
L.S.D. (.05) .....	—	0.17	0.35	0.34	0.44
C.V. % .....	—	4.2	4.1	6.1	6.5

<sup>1</sup>Cumberland silt loam, (2% to 5% slopes), eroded.

**Table 39. Alfalfa: Yield Summary of test seeded in 1960**

Variety	Avg.	Springfield <sup>1</sup>				
		1961	1962	1963	1964	1965
Tons of air-dry hay per acre						
Williamsburg	3.74	2.48	3.61	5.76	3.50	3.36
DuPuits	3.58	2.48	3.60	5.97	3.34	2.50
Orchies	3.48	2.30	3.32	5.64	3.35	2.78
Lahontan	3.44	1.99	3.10	5.25	3.54	3.30
Narragansett	3.42	2.11	3.25	5.48	3.33	2.95
Maliani	3.39	2.15	3.25	5.26	3.35	2.93
Socheville	3.35	2.50	3.60	5.70	3.12	1.85
Zia	3.31	1.91	2.77	5.17	3.36	3.35
Buffalo	3.28	2.05	3.02	5.29	3.16	2.89
Vernal	3.27	1.94	3.01	5.18	3.06	3.14
P.A.G. FD-100	3.25	2.52	3.51	5.64	2.83	1.76
L.S.D. (.05)	—	0.30	0.43	0.46	N.S.	0.59
C.V. %	—	9.2	9.1	5.8	10.1	14.6

<sup>1</sup>Bewieville silty clay loam, (2% to 5% slopes), severely eroded.

**Table 40. Red clover: Yield summary of tests seeded in 1964 and 1965**

Variety	Avg.	Crossville <sup>1</sup> 1965	Spring Hill <sup>2</sup> 1965	Springfield <sup>3</sup> 1965	Knoxville <sup>4</sup> 1965
<b>Tons of air-dry hay per acre</b>					
Ky. Syn. A <sub>2</sub> .....	3.27	3.53	2.18	4.50	2.86
Kenland .....	3.27	3.72	2.15	4.30	2.72
Pennscott .....	3.24	3.86	1.87	4.61	2.61
Orbit .....	3.16	4.02	2.08	4.02	2.50
Lakeland .....	2.90	3.24	2.12	4.22	2.02
L.S.D. (.05) .....	—	0.54	0.20	0.38	0.38
C.V. % .....	—	9.4	6.2	5.7	10.0

<sup>1</sup>Hartsells loam, (2% to 5% slopes).

<sup>2</sup>Mauzy silt loam, (2% to 5% slopes).

<sup>3</sup>Mountview silt loam, (2% to 5% slopes).

<sup>4</sup>Etowah silt loam, (2% to 5% slopes).

**Table 41. Red clover: Yield summary of tests seeded in 1963**

Variety	Crossville			Jackson		
	1964	1965	Average 1964-65	1964	1965	Average 1964-65
<b>Tons of air-dry hay per acre</b>						
Ky. Syn. A <sub>2</sub> .....	6.13	1.89	4.01	5.22	2.86	4.04
Kenland .....	6.06	0.0	3.03	4.88	1.88	3.38
Orbit .....	5.54	0.0	2.77	4.69	1.84	3.26
Pennscott .....	5.93	0.0	2.96	4.43	1.08	2.76
Ky. 215 .....	5.12	0.0	2.56	4.57	1.75	3.16
Lakeland .....	5.40	0.0	2.70	4.69	1.24	2.96
L.S.D. (.05) .....	0.51	—	—	N.S.	0.81	—
C. V. % .....	6.0	—	—	9.3	30.3	—

## SOYBEANS

Soybean varieties were tested at Martin, Jackson, and Spring Hill from 1963 through 1965. Pickett, a new cyst nematode resistant variety, was tested for the first time in 1965. This variety yielded as well as Lee at Jackson and Spring Hill but not as well as Lee at Martin. The yields at Martin were higher than usual for this location. Pickett may be about the same or a few days later in maturity than Lee.

Two other new varieties — Dare and Davis — have been tested in the Regional test at Martin, Jackson, and Milan. They have yielded a little less than Lee at these locations. No data are reported for these two varieties in this report. Data are presented in Tables 42 and 43.

**Table 42. Soybeans: Yield summary of varieties tested at Martin and Jackson from 1963 through 1965**

Variety	Martin avg.	Martin			Jackson		
	1963-65	1965 <sup>1</sup>	1964 <sup>2</sup>	1963 <sup>2</sup>	1965 <sup>1</sup>	1964 <sup>2</sup>	1963 <sup>2</sup>
<b>Bushels per acre</b>							
Hill	32	56	22	18	—	39	20
Lee	29	50	21	17	37	41	18
Hood	30	47	22	20	—	—	—
Ogden	27	45	21	15	33	—	—
Hinn	—	58	—	—	29	—	—
Pickett	—	42	—	—	38	—	—
Hampton 266	—	—	17	13	—	36	14
Kent	—	—	27	12	—	42	23
Dorman	—	—	—	8	—	—	—
Hale 3	—	—	—	15	—	—	15
Clark	—	—	—	17	—	—	—
Arthur Hopkins	—	—	—	11	—	—	12
Rebel 22	—	—	—	—	—	38	—
Rebel	—	—	—	—	—	—	14
<b>Experimentals:</b>							
D63-7320	—	46	—	—	26	—	—
T-61-30	—	58	—	—	31	—	—
T-61-88	—	47	—	—	29	—	—
T-61-69	—	48	—	—	35	—	—
T-61-47 (L)	—	—	25	—	—	—	—
T-61-50	—	—	19	—	—	42	—
T-61-48	—	—	—	—	—	39	—
L.S.D. (.05)	—	8.0	N.S.	3.5	4.7	N.S.	5.0
C.V. %	—	11.1	10.5	10.5	10.0	7.9	19.4

<sup>1</sup>Collins silt loam, (0% to 2% slopes).

<sup>2</sup>Grenada silt loam, (2% to 5% slopes).

<sup>3</sup>Grenada silt loam, (2% to 5% slopes)

<sup>4</sup>Memphis silt loam, (0% to 2% slopes).

<sup>5</sup>Grenada silt loam, (0% to 2% slopes).

<sup>6</sup>Memphis silt loam, (0% to 2% slopes)



**Table 43. Soybeans: Yield summary of varieties tested at Spring Hill from 1963 through 1965**

Variety	Average	1965 <sup>1</sup>	1964 <sup>2</sup>	1963 <sup>3</sup>
<b>Bushels per acre</b>				
Hill .....	28	21	27	37
Ogden .....	26	22	24	34
Lee .....	26	27	20	30
Hood .....	—	26	28	—
Pickett .....	—	25	—	—
Hinn .....	—	22	—	—
Hampton 266 .....	—	—	18	20
Kent .....	—	—	26	39
Dorman .....	—	—	—	34
Hale 3 .....	—	—	—	35
Arthur Hopkins .....	—	—	—	21
<b>Experimentals:</b>				
D 63-7320 .....	—	19	—	—
T-61-30 .....	—	24	—	—
T-61-50 .....	—	—	21	—
T-61-48 .....	—	—	22	—
L.S.D. (.05) .....	—	2.5	2.2	4.2
C.V. % .....	—	7.4	6.4	1.8

<sup>1</sup>Maury silt loam, (2% to 5% slopes).

<sup>2</sup>Maury silt loam, (2% to 5% slopes).

<sup>3</sup>Maury silt loam, (2% to 5% slopes).

## GRAIN SORGHUM

The grain sorghum tests reported were conducted at Springfield, Spring Hill, and Ames Plantation. The test at Spring Hill was damaged by birds. These results are reported, along with the bird damage ratings, for this location. From these results it seems that Ga. 615, AKS 614, Advance 91, N. K. 222, and DeKalb BR-60 have some resistance to bird damage. Ranger A, P.A.G. 515, Pioneer 820 and Frontier 400C were severely damaged by birds. No bird damage was noted at Springfield or Ames Plantation.

**Table 44. Grain sorghums: Yields and other characteristics of varieties tested in 1965**

Variety	Spring-field <sup>1</sup>	Ames Plantation	Spring Hill <sup>2</sup>	Bird Damage <sup>3</sup>	Plant height	Head type	Grain moisture prior to harvest
	Bushels	per acre		Rating	In.		%
AKS 614	125	71	106	1.0	58	Open	19.4
DeKalb E-57	115	67	81	2.8	59	Open	23.0
Ga. 615	113	66	95	1.0	61	Open	21.0
P.A.G. 430	113	63	83	3.2	54	Med.	19.6
N. K. 222	113	63	100	1.5	51	Med.-Open	19.8
Rico	117	58	83	3.0	52	Tight	19.0
McCurdy 70	114	60	62	3.5	61	Tight	20.0
R. S. 610	118	56	68	3.5	61	Tight	20.0
P.A.G. 515	116	56	66	4.0	60	Tight	20.6
DeKalb C44B	116	56	83	3.0	56	Med.-Open	20.3
Lindsy 744	121	51	75	3.0	56	Med.	19.8
Co-op 1	117	53	68	3.2	58	Tight	17.6
N. K. 212	112	59	83	3.0	59	Med.-Tight	17.6
Advance 14	111	58	73	2.8	52	Open	19.5
Ranger A	111	58	58	3.8	60	Tight	20.6
DeKalb Br-60	114	48	95	2.0	59	Open	20.6
Co-op 2	104	57	82	2.5	53	Med.-Open	19.9
Pioneer 820	104	57	77	3.8	54	Med.	22.4
Frontier 400C	105	56	62	3.8	58	Tight	17.4
Advance 91	101	53	75	1.5	49	Tight	20.1
R. S. 622	89	44	77	2.5	45	Med.	21.4
DeKalb F-63	80	38	56	3.2	55	Med.	21.6

<sup>1</sup>Ennis silt loam, (2% to 5% slopes).

<sup>2</sup>Maury silt loam (2% to 5% slopes).

<sup>3</sup>A rating of 1 to 5 was made for bird damage, 1 being slight and 5 very heavy damage.

**Table 45. Grain sorghums: Yield summary of varieties tested for 3 years, 1963-65**

Variety	3 Yr. avg. 1963-65 <sup>1</sup>	Plant height	Head type	Grain moisture prior to harvest	Maturity
	Bu./A.	In.		%	
AKS 614	106	53	Open	17.2	Med.
DeKalb E-57	106	55	Open	20.4	Late
P.A.G. 515	104	56	Tight	19.6	Late
McCurdy 70	96	55	Tight	17.6	Med.
Lindsey 744	94	51	Med.	17.1	Early
P.A.G. 430	94	50	Med.	16.8	Early
Frontier 400C	93	54	Tight	16.2	Early
R. S. 610	93	55	Tight	17.6	Med.
DeKalb C-44B	92	52	Med.-Open	17.7	Med.
DeKalb F-63	87	55	Med.	19.6	Late

## TOBACCO

Data for burley tobacco were furnished by L. J. Hoffbeck, Assistant Professor of Agronomy (Cooperative with the USDA) and J. Hugh Felts, Superintendent of the Tobacco Experiment Station.

Since the 1965 variety results were not yet available, the data included in the bulletin are for 1964 and previous years. The burley varieties were tested at four locations and the dark-fired and dark air-cured tobacco at one location.

Data are presented in Tables 46 through 50.



Figure 3. Burley Tobacco Variety Test, Spring Hill, 1964.

**Table 46. Burley tobacco: Average yield for years 1963-64**

Variety or Hybrid	State average	Greeneville <sup>1</sup>	Rutledge <sup>2</sup>	Spring Hill <sup>3</sup>	Spring-field <sup>4</sup>
Pounds per acre					
Burley 1 .....	2958	2552	2936	2854	3492
Burley 21 .....	2729	2422	2653	2764	3078
Burley 37 .....	2519	2191	2543	2465	2878
Burley 49 <sup>5</sup> .....	2341	2334	2329	2130	2572
Kentucky 9 .....	2832	2534	2986	2466	3342
Kentucky 10 .....	3067	2806	2924	3098	3441
Kentucky 12 .....	2870	2635	2956	2602	3287
Kentucky 16 .....	2578	2321	2655	2406	2932
MS Bu. 21 x Ky. 9 <sup>6</sup> .....	2884	2542	2966	2656	3374
MS Bu. 21 x Ky. 10 <sup>6</sup> .....	3049	2720	3053	2953	3471
MS Bu. 21 x Ky. 12 <sup>6</sup> .....	2886	2580	2856	2660	3448
MX L8 x Bu. 21 .....	2637	2284	2742	2625	2896
Average .....	2779	2493	2800	2640	3184
L.S.D. (.05) .....	104	198	215	246	170

<sup>1</sup>Lindside silt loam in 1963, Waynesboro loam in 1964.

<sup>2</sup>Hayter loam.

<sup>3</sup>Maury silt loam.

<sup>4</sup>Huntington silt loam.

<sup>5</sup>Burley 49 values adjusted because it was only tested in 1964.

<sup>6</sup>Average values of seed furnished by three seed producers.

**Table 47. Burley tobacco: Average acre value<sup>1</sup>, 1963-64**

Variety or Hybrid	State average	Greeneville	Rutledge	Spring Hill	Springfield
Dollars per acre					
Burley 1 .....	1842	1590	1808	1784	2188
Burley 21 .....	1709	1487	1648	1722	1980
Burley 37 .....	1574	1372	1574	1531	1818
Burley 49 <sup>2</sup> .....	1438	1425	1488	1193	1648
Kentucky 9 .....	1736	1546	1783	1482	2131
Kentucky 10 .....	1914	1754	1840	1879	2182
Kentucky 12 .....	1771	1632	1780	1575	2096
Kentucky 16 .....	1577	1393	1602	1450	1864
MS Bu. 21 x Ky. 9 .....	1812	1578	1827	1677	2166
MS Bu. 21 x Ky. 10 .....	1926	1698	1908	1854	2245
MS Bu. 21 x Ky. 12 .....	1803	1602	1758	1643	2208
MS L8 x Bu. 21 .....	1607	1365	1686	1570	1806
Average .....	1726	1537	1725	1613	2028
L.S.D. (.05) .....	71	134	144	178	111

<sup>1</sup>Acre values calculated from federal grades, not from individual sales.<sup>2</sup>See footnote 5 of previous table.**Table 48. Burley tobacco: Average percentage considered strictly usable by five cigarette manufacturers, 1963-64<sup>1</sup>**

Variety or Hybrid	State average <sup>2</sup>	Greeneville	Rutledge	Spring Hill	Springfield
	%	%	%	%	%
Burley 1 .....	29.8	37.2	23.2	42.1	22.8
Burley 21 .....	40.1	31.0	47.7	55.5	34.0
Burley 37 .....	29.3	25.2	30.0	36.5	29.2
Burley 49 <sup>3</sup> .....	25.4	19.9	31.9	27.3	23.4
Kentucky 9 .....	20.1	19.7	21.0	19.0	20.2
Kentucky 10 .....	17.9	16.9	17.5	32.4	12.2
Kentucky 12 .....	21.6	19.2	20.4	32.6	19.8
Kentucky 16 .....	22.1	16.9	17.9	34.6	25.2
MS Bu. 21 x Ky. 9 .....	22.1	18.7	23.2	36.4	17.1
MS Bu. 21 x Ky. 10 .....	21.7	17.0	24.0	35.9	17.1
MS Bu. 21 x Ky. 12 .....	19.5	17.9	18.7	31.2	16.0
MS L8 x Bu. 21 .....	16.0	19.3	15.2	16.5	13.2
Average .....	23.8	21.6	24.2	33.3	20.8
L.S.D. (.05) .....	7.3				

<sup>1</sup>Spring Hill location not included in 1963.<sup>2</sup>Weighted average, total of 3 locations in 1963 and 4 locations in 1964 divided by 7.<sup>3</sup>Burley 49 tested in 1964 only.

**Table 49. Dark fire-cured tobacco: Average yield and acre value  
of varieties grown on the Highland Rim Experiment Station,  
Springfield, Tennessee from 1962 through 1964**

Variety	Acre Yield				Acre Value <sup>1</sup>			
	1962-64	1964 <sup>2</sup>	1963 <sup>3</sup>	1962 <sup>4</sup>	1962-64	1964	1963	1962
		Pounds per acre				Dollars per acre		
Broad Leaf Madole .....	2418	2447	2392	2413	1008	1039	944	1042
Black Mammoth .....	2404	2558	2356	2298	995	1055	923	1006
DF-516 .....	2231	2294	2212	2188	957	843	929	910
Ky. 157 .....	2108	2152	2141	2032	850	862	804	883
Ky 152 .....	—	—	2153	2126	—	—	782	938
Ky. 156 .....	—	—	1977	1890	—	—	736	819
Ky. 155 .....	—	—	1949	1775	—	—	756	744
Va. 331 .....	—	2125	2063	—	—	800	725	—
Va. 312 .....	—	—	—	2250	—	—	—	983
Little Stalk Black Mammoth .....	—	—	—	2194	—	—	—	984
<b>Experimentals:</b>								
Tennex 300 .....	2201	2279	2123	2200	907	941	803	979
Tennex 901 .....	2157	2242	2017	2211	843	876	737	917
Tennex 902 .....	—	2517	2232	—	—	1043	949	—
Tennex 903 .....	—	2202	—	—	—	869	—	—
Tennex 900 .....	—	—	2160	2223	—	—	750	933
L.S.D. (.05) .....	—	86.6	86.1	142.7	—	41.6	63.9	78.5
C.V. % .....	—	3.2	3.5	5.7	—	3.8	6.8	7.3

<sup>1</sup>These values are based on the average value for the various grades on all type 22 markets, during the 5-year period, 1954-58.

<sup>2</sup>Dickson silt loam, (2% to 5% slopes), and Mountview silt loam (2% to 5% slopes).

<sup>3</sup>Dickson silt loam, (2% to 5% slopes).

<sup>4</sup>Mountview silt loam (2% to 5% slopes), and Dickson silt loam (2% to 5% slopes).

**Table 50. Dark air-cured tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee from 1962 through 1964**

	Acre Yield				Acre Value <sup>1</sup>			
	1962-64	1964 <sup>2</sup>	1963 <sup>3</sup>	1962 <sup>4</sup>	1962-64	1964	1963	1962
	Pounds per acre				Dollars per acre			
Johns .....	2358	2662	2211	2201	899	1001	857	838
Ky. 160 .....	2133	2395	2026	1979	864	948	833	811
Ky. 163 .....	—	—	1929	1921	—	—	914	700
Ky. 164 .....	—	—	1444	1655	—	—	561	595
Va. Imp. Str. 2 .....	—	—	—	2086	—	—	—	839
Narrow Leaf one Sucker .....	—	—	—	1994	—	—	—	774
<b>Experimentals:</b>								
O. S. 901 .....	—	2646	2285	—	—	961	875	—
O. S. 900 .....	—	2641	2197	—	—	905	776	—
L.S.D. (.05) .....	—	93.6	117.2	83.0	—	42.4	57.9	40.0
C.V. % .....	—	3.0	4.9	3.5	—	3.6	6.3	4.4

<sup>1</sup>These values are based on the average value for the various grades on all type 35 markets, during the 5-year period, 1954-58.

<sup>2</sup>Dickson silt loam, (2% to 5% slopes).

<sup>3</sup>Ennis silt loam, (0% to 2% slopes).

<sup>4</sup>Bewleyville silt loam (5% to 12% slopes), and Dickson silt loam (2% to 5% slopes)

# PERFORMANCE OF SUMMER ANNUAL GRASSES FOR GRAZING AND GREEN-CHOPPING—1965

**Sudangrasses — Sudangrass-sorghum hybrids — Pearl millets**

By

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Summer annual grasses have become increasingly important in recent years, particularly in farm enterprises where a reliable source of large amounts of quality forage during the hot and dry part of the growing season is required. The development of improved varieties of Sudangrass and pearl millet and, more recently, of hybrids between Sudangrass and male-sterile sorghums, has resulted in a large number of varieties for which seed is available commercially. All these plants can be grazed, green-chopped, or even used for stored feed; however, they are difficult to cure properly for hay in Tennessee and are generally considered as emergency silage crops.

Variety evaluation tests have been conducted by the University of Tennessee since 1955, and the results obtained through 1962 have been published in Tennessee Agricultural Experiment Station Bulletin 373 (Revised).

Differentiation among the different varieties and hybrids of Sudangrass is difficult, especially if leaf characteristics alone are used. To some extent, seed shape, glume color, stalk size, maturity, sweetness of juices, presence of rhizomes, and nature of heads and blooms can all be utilized to differentiate among these varieties and hybrids. Some hybrids of Sudangrass and sorghum resemble true Sudangrasses, whereas others are similar in appearance to sweet sorghum, having characteristically thicker and juicier stalks. Others approach a grain sorghum in appearance, with compact heads and very large stalks.

The average state yields, using all available data and adjusted for location-to-location and year-to-year variation, are presented in Table 1. In addition, the distribution of production during the growing season, disease and uniformity ratings, and prussic acid



potential classes have been tabulated. In Table 2 are presented the yields for 1963, 1964, and 1965 obtained at each of the five locations. For more detailed descriptions and information on management see Bulletin 373 (Revised).

The varieties generally were harvested when growth reached a height not greater than 30 inches and were cut to a stubble of 6 to 8 inches. Occasionally, harvesting was delayed after growth reached 30 inches in height; in such cases, yields were higher and fewer harvests were made during the season. At some locations, all varieties were cut at the same time; at others, each variety was cut individually whenever it reached the desired stage of growth.

Since yield alone is not the only consideration in selecting a variety, a number of other factors were evaluated in deciding on the varieties of summer annual grasses to be recommended by the University of Tennessee for grazing or green-chopping. These considerations included the following: 1) the variety had been tested under at least five different environments extending over at least a 2-year period; 2) the total dry matter adjusted average yield was larger than 3 tons per acre per year for Sudangrasses and pearl-millet, and larger than 3.5 tons per acre per year for Sudangrass-sorghum hybrids; 3) more than 45% of the yearly production occurred after August 1, and more than 22% after September 1; 4) disease incidence was low (less than 2.5 with scale used); 5) uniformity was high (more than 3.5 with scale used); 6) leafiness was high; 7) prussic acid potential was less than 200 parts per million on green weight basis (sampling top-most leaf blade with a formed collar); and 8) seed was expected to be available to growers. The varieties meeting these criteria have been starred in Table 1.

**Table 1. SUDANGRASSES, SUDANGRASS-SORGHUM HYBRIDS AND MILLETS: Summary of yield, dry matter, cumulative seasonal distribution of production, disease, and uniformity ratings, and prussic acid potential, at five locations in Tennessee, 1955-1965.**

	Variety or Strain (listed alphabetically)	Number of experi- ments	Adjusted average <sup>a</sup> yield (T/A)	Cumulative distribution of production (percent)					Disease rating <sup>1</sup>	Uni- formity rating <sup>2</sup>	Prussic Acid Potential <sup>3</sup>	
				Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1				
SUDANGRASSES AND HYBRIDS:												
	Advance 1038GE .....	7	3.88	20	80	52	23	5	3.5	3.5	M	
	1071F .....	7	3.36	23	77	47	23	5	1.0	3.3	M	
#	1085F .....	4	3.39	26	74	47	29	3	—	—	VH	
**	Asgrow Beefbuilder T .....	7	3.74	26	74	47	26	8	2.5	5.0	H	
	Duet .....	7	3.50	21	79	44	25	5	2.0	4.7	VH	
**	Grazer A .....	10	4.54	22	78	51	28	9	2.0	3.5	H	
	Titan R .....	7	3.47	20	80	46	26	5	3.0	4.5	VH	
**	Caladino Greenlan .....	7	4.34	25	75	47	23	3	2.5	4.0	H	
**	DeKalb Sudax SX-11 .....	26	4.19	20	80	48	24	5	3.3	4.0	M	
**	Sudax SX-12 .....	8	4.47	21	79	52	25	9	2.5	5.0	H	
**	Dorman Sure-Graze .....	6	4.13	14	86	57	26	4	2.0	5.0	H	
#	Excel Chow-maker .....	4	4.33	31	69	48	25	4	—	—	H	
#	Chow-maker 21 .....	4	3.84	23	77	51	26	4	—	—	M	
#	Silo-Fill 33 .....	4	3.76	29	71	49	27	3	—	—	H	
#	XP-1 .....	4	4.07	29	71	46	23	3	—	—	M	
**	Frontier Hi-dan 38 .....	16	4.17	21	79	45	24	6	1.0	3.8	H	
#	Hi-dan 39 .....	4	4.07	27	73	50	27	4	—	—	H	
#	Gilbreath Honey Sweet .....	4	3.71	20	80	53	29	8	—	—	H	
**	Green Bros. Green Graze .....	11	4.43	23	77	49	28	7	1.6	3.9	H	
	Greenleaf .....	42	3.12	18	82	51	23	6	1.3	4.8	M	
**	Hunt & Tipps Green-M .....	10	3.97	19	81	49	23	9	2.0	3.5	H	
**	Lindsey 77F .....	13	4.19	22	78	48	24	9	2.0	3.5	M	

Table 1.—(Continued)

	Variety or Strain (listed alphabetically)	Number of experi- ments	Adjusted average* yield (T/A)	Cumulative distribution of production (percent)					Disease rating <sup>1</sup>	Uni- formity rating <sup>2</sup>	Prussic Acid Potential <sup>3</sup>
				Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1			
#	Miller P-100 .....	4	4.21	20	80	57	31	10	—	—	M
#	SP-110 .....	4	3.93	20	80	56	28	4	—	—	M
**	Northrup-King Sordan .....	11	3.97	24	76	48	26	7	1.1	3.2	M
**	Trudan I .....	11	3.38	24	76	48	25	5	2.2	3.0	L
#	Trudan II .....	5	3.87	23	77	52	26	7	—	—	L
#	Trudan III .....	5	3.32	24	76	46	20	3	—	—	M
#	Trudan IV .....	5	3.94	23	77	52	30	13	—	—	L
	Paymaster Aztec .....	7	3.14	28	72	47	24	5	2.5	4.2	H
	Crop Guard .....	7	3.22	22	78	46	24	4	1.5	4.3	VH
66	** Sweet Sioux .....	18	4.28	25	75	46	25	6	1.7	3.6	M
#	Thunderbird .....	5	4.06	28	72	51	28	7	—	—	M
**	Pfister Su-Chow 34 .....	14	4.93	24	76	50	27	7	2.0	4.0	M
*	Su-Chow 35 .....	15	4.36	22	78	48	27	6	2.5	4.2	M
#	Pioneer 930 .....	4	3.43	33	67	44	24	3	—	—	VH
#	931 .....	4	3.27	27	73	46	23	3	—	—	VH
#	980 .....	4	3.76	20	80	51	24	9	—	—	M
#	981 .....	4	3.98	22	78	56	30	5	—	—	L
#	985 .....	4	4.24	22	78	52	30	8	—	—	M
**	Piper .....	43	3.17	22	78	45	19	5	2.9	4.6	L
	Riley Ga-Su .....	7	3.95	23	77	50	25	4	3.5	2.5	M
	Hy-Su .....	7	3.94	21	79	47	22	2	4.0	3.0	M
	Su-Graze .....	7	3.76	26	74	49	22	4	3.5	3.5	M
**	Rudy-Patrick Mor-Su .....	12	4.27	25	75	47	26	7	2.0	3.2	M
**	Su-I .....	8	3.92	21	79	52	27	8	2.0	3.6	H
#	Scott Grazer .....	4	3.71	18	82	56	33	10	—	—	M

Table 1.— (Continued)

Variety or Strain (listed alphabetically)	Number of experi- ments	Adjusted average <sup>1</sup> yield (T/A)	Cumulative distribution of production (percent)					Disease rating <sup>1</sup>	Uni- formity rating <sup>2</sup>	Prussic Acid Potential <sup>3</sup>
			Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1			
** Suhi-1	21	4.04	16	84	52	30	8	1.5	4.5	M
** Taylor-Evans Grazemaster	7	4.35	22	78	51	24	2	2.5	4.0	H
** Haygrazer	11	4.31	24	76	47	27	6	2.8	4.0	H
# 3083-X	4	4.10	29	71	50	27	5	—	—	M
# 3084-X	4	3.85	24	76	49	25	4	—	—	H
Tennessee Co-op Exp. No. 1	6	3.53	20	80	42	25	3	1.0	3.5	M
** Tennessee Co-op Exp. GHS-1	7	4.06	27	73	52	27	9	3.5	3.7	H
# GHS-2	5	3.89	22	78	55	30	8	—	—	M
Tennessee Synthetic 1 sudangrass	10	3.69	20	80	51	25	7	3.5	4.0	L
** R. G. Young Kow Kandy	7	3.53	22	78	50	26	6	2.5	3.5	M
<b>MILLETS:</b>										
** Gahi-1 pearl millet	43	4.54	16	84	51	26	8	0.5	5.0	—
Gahi-2 pearl millet	13	3.89	21	79	43	25	6	0.5	4.5	—
** Starr pearl millet	43	3.41	15	85	48	22	5	0.0	5.0	—

\*Adjusted variety average =  $\frac{\text{Variety total for years and locations grown} \times \text{All years and locations base average.}}{\text{Base total for same years and locations.}}$

Base total for same years and locations.

Base average based on performance of Piper and Greenleaf Sudangrasses and Starr and Gahi-1 pearl millets.

\*0 = no disease

5 = most disease

\*5 = most uniform

1 = least uniform

<sup>3</sup>Parts per million on green weight basis (avg. of 10 determinations)  
(by courtesy of Elmer Gray and A. J. Hester)

L = Low = 0 to 50 p.p.m.

M = Moderate = 51 to 125 p.p.m.

H = High = 126 to 200 p.p.m.

VH = Very high = 201 p.p.m. and over

\*\*Recommended varieties

# Insufficient information for recommendation.

**Table 2. SUDANGRASSES, SUDANGRASS-SORGHUM HYBRIDS AND MILLETS: Dry matter production (Tons per acre) and number of harvests at five locations in Tennessee, 1963-1965.**

Variety or Strain (listed alphabetically)	Spring- field <sup>1</sup>			Knoxville <sup>2</sup>			Spring Hill <sup>3</sup>			Cross- ville <sup>4</sup>		Jackson <sup>5</sup>		
Number of harvests	1963	1964	1965	1963	1964	1965	1963	1964	1965	1964	1965	1963	1964	1965
	4	4	4 to 5	5 to 7	5 to 7	5 to 6	4	4	5	4 to 6	4 to 5	5	7	8
<b>SUDANGRASSES AND HYBRIDS:</b>														
Advance 1038GE	—	—	2.65	—	2.62	5.24	—	—	3.92	3.12	3.76	—	2.19	—
1071F	—	—	2.72	—	3.48	3.61	—	2.60	2.75	—	3.75	—	—	2.69
1085F	—	—	3.17	—	—	3.71	—	—	2.86	—	—	—	—	2.93
Asgrow Beefbuilder T	—	—	2.54	—	3.40	3.80	—	3.31	2.84	—	5.21	—	—	2.92
Dust	—	—	3.04	—	3.11	3.67	—	—	2.56	2.87	3.82	—	2.10	—
Grazer A	6.07	4.58	—	2.45	3.36	5.63	—	4.21	3.81	3.60	—	3.82	2.63	—
Titan R	—	—	2.43	—	3.01	3.76	—	—	3.10	3.11	3.62	—	1.98	—
Caladino Greenlan	—	—	3.68	—	3.60	5.43	—	3.71	3.49	3.48	—	—	2.33	—
DeKalb Sudax SX-11	6.12	3.75	2.90	2.26	3.14	4.62	3.64	4.04	3.42	3.57	2.80	3.86	2.50	3.38
Sudax SX-12	—	4.78	3.26	—	3.54	4.83	—	4.22	3.52	3.86	—	—	2.37	—
Dorman Sure-Graze	—	—	3.62	—	2.95	5.20	—	—	3.23	3.18	—	—	2.40	—
Excel Chow-maker	—	—	3.98	—	—	4.94	—	—	3.71	—	—	—	—	3.55
Chow-maker 21	—	—	—	—	—	4.97	—	—	4.18	—	2.95	—	—	3.32
Experimental 101	—	—	—	—	—	5.24	—	—	—	—	—	—	—	—
102	—	—	—	—	—	5.10	—	—	—	—	—	—	—	—
103	—	—	—	—	—	5.24	—	—	—	—	—	—	—	—
104	—	—	—	—	—	4.82	—	—	—	—	—	—	—	—
105	—	—	—	—	—	3.68	—	—	—	—	—	—	—	—
106	—	—	—	—	—	5.98	—	—	—	—	—	—	—	—
107	—	—	—	—	—	6.72	—	—	—	—	—	—	—	—
108	—	—	—	—	—	5.68	—	—	—	—	—	—	—	—
Silo-Fill 33	—	—	3.48	—	—	4.51	—	—	3.05	—	—	—	—	3.03
XP-1	—	—	—	—	—	5.14	—	—	4.45	—	3.31	—	—	3.42
Frontier Hi-dan 38	—	4.13	—	2.22	3.19	5.39	—	3.80	3.18	3.31	—	3.64	2.60	—

Table 2.—(Continued)

Variety or Strain (listed alphabetically)	Spring- field <sup>1</sup>			Knoxville <sup>2</sup>			Spring Hill <sup>3</sup>			Cross- ville <sup>4</sup>		Jackson <sup>5</sup>		
Number of harvests	1963	1964	1965	1963	1964	1965	1963	1964	1965	1964	1965	1963	1964	1965
	4	4	4 to 5	5 to 7	5 to 7	5 to 6	4	4	5	4 to 6	4 to 5	5	7	8
Hi-dan 39	—	—	3.64	—	—	4.77	—	—	3.25	—	—	—	—	3.57
Gilbreath Honey Sweet	—	—	—	—	—	4.81	—	—	3.11	—	3.64	—	—	3.33
Green Bros. Green Graze	6.58	4.86	—	2.70	3.14	5.39	3.73	3.75	3.82	3.37	—	3.74	2.58	—
Greenleaf	4.71	2.61	2.33	1.86	2.27	4.18	3.17	3.00	3.32	—	3.96	2.85	2.09	3.02
Hunt & Tipps Green-M	—	4.12	3.03	—	3.07	5.13	—	2.62	3.62	3.38	3.88	—	2.44	3.53
Lindsey 77F	—	4.79	3.48	—	2.95	4.89	—	—	3.45	3.54	3.82	—	2.30	3.49
Miller P-100	—	—	—	—	—	5.36	—	—	3.63	—	4.21	—	—	3.69
SP-110	—	—	3.09	—	—	4.49	—	—	3.84	—	—	—	—	3.28
Northrup-King Sordan	4.45	3.80	—	2.22	3.26	5.03	4.20	3.77	3.27	3.40	—	3.64	2.11	—
Trudan I	3.37	3.38	—	1.56	2.75	3.79	3.80	3.21	3.41	2.84	—	3.15	2.13	—
Trudan II	—	—	2.64	—	—	4.79	—	—	3.80	—	4.07	—	—	3.32
Trudan III	—	—	2.04	—	—	4.06	—	—	3.68	—	3.22	—	—	2.96
Trudan IV	—	—	2.60	—	—	6.53	—	—	3.56	—	3.13	—	—	3.14
Paymaster Aztec	—	—	2.50	—	3.04	3.48	—	2.81	2.60	—	3.43	—	—	2.33
Crop Guard	—	—	2.36	—	3.10	3.78	—	—	2.26	—	3.78	—	1.65	2.76
Sweet Sioux	6.07	4.69	—	2.42	3.50	5.19	4.66	3.84	3.55	3.54	—	3.28	2.19	—
Thunderbird	—	—	3.10	—	—	5.59	—	—	3.56	—	3.97	—	—	3.32
Pfister Su-Chow 34	—	4.66	—	2.58	3.18	6.01	4.59	4.03	4.06	3.51	—	3.54	2.38	—
Su-Chow 35	6.32	4.97	—	2.20	2.99	5.24	3.87	3.96	3.26	3.44	—	3.55	2.44	—
Pioneer 930	—	—	2.72	—	—	4.09	—	—	2.86	—	—	—	—	3.15
931	—	—	—	—	—	3.90	—	—	2.72	—	3.42	—	—	3.06
980	—	—	—	—	—	5.60	—	—	3.30	—	2.74	—	—	3.45
981	—	—	3.26	—	—	4.68	—	—	3.41	—	—	—	—	3.54
985	—	—	—	—	—	5.08	—	—	4.43	—	3.95	—	—	3.54
Piper	3.32	2.78	2.14	1.58	1.94	4.02	3.81	3.74	3.44	2.18	2.70	2.91	2.03	3.16

Table 2.—(Continued)

Variety or Strain (listed alphabetically)	Spring- field <sup>1</sup>			Knoxville <sup>2</sup>			Spring Hill <sup>3</sup>			Cross- ville <sup>4</sup>		Jackson <sup>5</sup>		
	1963	1964	1965	1963	1964	1965	1963	1964	1965	1964	1965	1963	1964	1965
	4	4	4 to 5	5 to 7	5 to 7	5 to 6	4	4	5	4 to 6	4 to 5	5	7	8
Riley Ga-Su .....	—	—	2.83	—	2.71	5.64	—	3.43	3.28	3.29	—	—	—	3.30
Hy-Su .....	—	—	3.14	—	3.27	5.24	—	—	3.30	3.52	3.06	—	2.34	—
Su-Graze .....	—	—	2.53	—	2.96	5.34	—	3.76	3.49	—	2.62	—	2.44	—
Rudy-Patrick Mor-Su .....	5.10	4.69	—	2.36	3.08	5.06	4.07	3.91	4.28	3.27	4.51	3.79	2.50	—
Su-1 .....	—	4.08	3.28	—	2.54	4.47	—	3.22	3.51	3.39	—	—	2.14	—
Scott Grazier .....	—	—	—	—	—	4.54	—	—	3.58	—	3.29	—	—	3.46
Suhi-1 .....	5.71	3.98	—	2.41	3.01	4.94	3.47	3.65	3.36	—	2.85	2.88	2.70	—
Taylor-Evans Grazemaster .....	—	—	3.48	—	3.22	5.51	—	3.79	3.78	—	4.62	—	2.40	—
Haygrazer .....	6.48	4.31	—	2.55	3.11	5.39	3.96	3.56	3.43	3.34	—	3.65	2.68	—
3083-X .....	—	—	3.67	—	—	4.89	—	—	3.24	—	—	—	—	3.53
3084-X .....	—	—	—	—	—	4.87	—	—	3.41	—	3.66	—	—	3.51
Tennessee Co-op Exp. No. 1 .....	—	—	—	—	2.97	4.19	—	2.89	2.99	3.08	—	—	—	2.94
Tennessee Co-op Exp. GHS-1 .....	—	4.42	—	—	2.99	4.82	—	3.37	4.09	—	2.92	—	2.64	—
GHS-2 .....	—	—	3.16	—	—	4.69	—	—	3.83	—	3.57	—	—	3.49
Tennessee Synthetic 1 sudangrass .....	5.49	3.63	—	2.06	2.68	4.92	4.33	3.59	3.80	2.85	—	3.20	2.21	—
R. G. Young Kow Kandy .....	—	—	2.44	—	3.03	4.28	—	—	3.06	—	3.11	—	2.31	3.34
MILLETS:														
Gahi-1 pearl millet .....	6.37	4.38	4.22	2.60	3.10	4.96	3.98	3.78	3.46	4.33	4.90	3.50	2.60	3.66
Gahi-2 pearl millet .....	5.83	3.88	—	2.64	2.86	3.47	3.30	4.08	3.08	—	3.62	3.47	3.01	—
Starr pearl millet .....	5.23	2.64	2.74	2.07	2.20	3.16	3.28	2.92	2.55	—	3.72	3.58	2.16	2.90
L.S.D. (.05) .....	0.62	0.54	0.48	N.S.	0.59	1.11	0.41	0.40	0.51	0.50	1.18	0.54	0.38	0.76
C.V. % .....	8.0	7.9	12.8	—	17.5	20.4	7.5	8.6	10.9	13.2	20.4	13.8	14.4	6.5

N.S. = not significantly different at .05 level of probability

<sup>1</sup>Dickson silt loam, (2% to 5% slopes)<sup>2</sup>Huntington and Sequatchie silt loams, (0% to 2% slopes)<sup>3</sup>Maury silt loam, (0% to 2% slopes)<sup>4</sup>Hartsells loam, (2% to 5% slopes)<sup>5</sup>Memphis silt loam (0% to 2% slopes)

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Superintendent

**Field Stations**

Ames Plantation, Grand Junction, R. H. Scott, Manager  
Cumberland Plateau Forestry Field Station, Wartburg, J. S. Kring, Manager  
Friendship Forestry Field Station, Chattanooga  
Highland Rim Forestry Field Station, Tullahoma, P. J. Huffman, Jr., Manager  
Milan Field Station, Milan, T. C. McCutchen, Manager